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# Worldwide Report

ENVIRONMENTAL QUALITY

No. 293



FOREIGN BROADCAST INFORMATION SERVICE

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JAMMU, KASHMIR FOREST PRESERVATION PLAN TOLD

New Delhi PATRIOT in English 1 Feb 81 p 5

[Text] Srinagar, Feb 1 (PTI)--The Jammu and Kashmir Government has embarked on a programme for the preservation, development and scientific management of forests which constitute 52 per cent of the total area of the State.

Steps have been taken for curbing timber smuggling, encroachments on forest lands and reorganisation of the State Forest Department. [as published]

According to official data available here, a massive plantation drive will be stated with a target of six million new plantation this year. [as published]

For reducing the timber wastage caused through traditional methods, the Forest Department has started training its workers in using improved tools for felling and logging of trees.

The State Government recently reorganised the Forest Department for ensuring effective supervision of this green gold, which is the largest economically potential natural resources of the State. [as published]

The State Government has also prepared some working plans for the scientific management of the forests.

For curbing the menace of timber smuggling, the Forest Act has been amended, enhancing the punishments for the offenders, the maximum fine has been increased from Rs 500 to Rs 6,000 and incarceration from six months to two years. [as published]

Also two companies of the armed police have been raised to deal effectively with the smuggling of timber and other forest offences. The armed force has been deployed in the areas which are vulnerable to smuggling.

The extraction of resin through contractors has been done away with, and it was now extracted departmentally on wage contract basis. The State Government was also considering a proposal to involve local panchayats in resin extraction and some pilot projects would be taken up in the coming season.

CSO: 5000

IMPORTANT KARNATAKA RESERVOIR DAMAGED BY SILTING

Bombay THE TIMES OF INDIA in English 4 Feb 81 p 1

[Text] Bangalore, February 3. One of India's major irrigation-cum-electricity projects, which is also Karnataka's biggest undertaking, the Tungabhadra project, is gradually losing its usefulness because of heavy siltation in its reservoir which may dry up in the next eight years.

According to the latest survey, the life of this prestigious Rs. 100-crore project, originally estimated at 311 years, will be shortened considerably. The reservoir is expected to serve only up to 1989.

The project was conceived by the erstwhile states of Hyderabad and Madras as a permanent measure to give relief to the suffering of a constantly drought-hit region. It was inaugurated some 35 years ago. The area was transferred to Karnataka with the reorganisation of states in 1956. The beneficiaries of the Tungabhadra project are both Karnataka and Andhra Pradesh.

Initially, there was no assessment of the silt contribution to the Tungabhadra reservoir. It was only in 1956 that the all-India land use survey organisation indicated that out of the total catchment area of 66.5 lakh acres (26.6 lakh hectares), 11.30 lakh acres (4.52 lakh hectares), later revised to 18.46 lakh acres (7.38 lakh hectares) required to be provided urgently with comprehensive soil conservation measures.

The region surrounding the Tungabhadra reservoir mainly comprises sun-burnt tract, devoid of any vegetation. A substantial portion consists of black soil which is highly susceptible to erosion. The tributaries to the Tungabhadra bring large quantities of silt and deposit them in the reservoir, causing a threat to the safety of the dam.

CSO: 5000



## VIETNAM VETERANS TO JOIN U.S. AGENT ORANGE SUIT

Australian Lawyer's Offer

Wellington THE EVENING POST in English 26 Jan 81 p 10

[Text]

**AUCKLAND, Jan 25 (PA).** — Brisbane lawyer Mr Bill McMillan claims he will foot the bill for New Zealand Vietnam War veterans who wish to take legal action against the manufacturers of Agent Orange.

Mr McMillan arrived in New Zealand yesterday to interview veterans who might want to join Australian veterans taking legal action in the U.S.

Agent Orange and other defoliants used in the Vietnam War are blamed for deformities among veterans' children, and for causing psychological problems.

Mr McMillan is passing through New Zealand on his way to the U.S., where on Monday he will represent almost 3000 Australian veterans in a preliminary Court hearing to set dates for a later trial.

### No cost

He said that New Zealanders could be included in this case if they wished.

"It will cost them nothing. If we win the case then

the chemical companies will pay the costs and damages. If we lose then I will pay the costs. I believe in my feelings of success so I will carry the costs."

Mr McMillan said fewer than 10 New Zealand veterans had contacted him in Australia wanting information about possible Court action. Many more were reluctant to do so because they falsely believed it would cost them a lot of money.

During his two-day visit to New Zealand a meeting had been arranged in Whakatane, where he was to outline to veterans various courses of action open to them.

Mr McMillan also said if any New Zealand veterans wanted to sue the New Zealand Government for its part in sending New Zealanders to fight in Vietnam, then he would consider acting for them.

### No idea

The secretary of the Korean and South-east Asian Forces Association, Mr Vic Johnson, said he had no idea how many of the country's 4000 veterans would turn up to the Whakatane meeting. He refused to disclose num-

bers of any veterans considering legal action.

Veterans, he said, were interested in anything Mr McMillan might have to say and there were several matters they wished to take up with him. These included the possibility of legal action against the New Zealand Government.

"We are not so much interested in monetary claims as medical care for the children and families of ex-servicemen," he said.

## Veterans Association Meeting

Auckland THE NEW ZEALAND HERALD in English 26 Jan 81 p 5

Text Staff Reporter

Tauranga

### New Zealand Vietnam veterans will take part in legal action against 19 American chemical companies for their part in the widespread distribution of poisonous defoliants during the Vietnam War.

The veterans will join forces with their Australian and American allies in what could become the biggest damages case fought in the United States.

They will claim that since the 19 companies profited from their part in the spraying of chemicals such as Agent Orange, they should pay for the resulting damage to human lives.

New Zealanders may also join in a suit against the Australian Government over experiments and spraying it undertook in Vietnam.

And a spokesman for the New Zealand Veterans warned yesterday that if the New Zealand Government would not co-operate in the investigation it, too, could face legal action.

Veterans attending a meeting in Whakatane yesterday voted to join the "class" action, which already has 11,000 American and Australian plaintiffs.

#### Five Cases

Only 11 veterans attended the meeting, but counsel for the Australians, Mr William MacMillan, said only five representative cases would need to be presented to the New York Federal Court this Friday to have all New Zealanders included in the action.

If the court decided New Zealand would be allowed to join the class, notices would be sent to the 2.5 million Vietnam veterans in the three countries informing them they will automatically become plaintiffs in the case unless they opt out.

Mr MacMillan has engaged an Auckland solicitor, Mr Roger MacIaren, as his New Zealand representative.

Maps presented at the meeting traced the flight patterns of spraying aircraft during the 1960s and showed that the Phuoc Tuy province, where most New Zealand and many Australian soldiers were stationed, was one of the most heavily defoliated areas.

#### Birth Defects

A total of 203,000 gallons of defoliants was poured on to the province between 1965 and 1969.

American scientists visiting Vietnam later had found many miscarriages and birth defects in the previously robust population, Mr MacMillan told veterans.

He said that hereditary problems were not the only conditions attributable to exposure to toxics such as Agent Orange.

According to his figures, 11.3 million gallons of Agent Orange, 5.3 million gallons of Agent White and 1.1 million gallons of arsenic-based herbicide had been sprayed on Vietnam.

#### First Goal

Mr MacMillan said scientific evidence would play a major part in the case when the trial proper began in May.

The first goal would be to establish liability and he hoped a verdict on that point would be available this year.

Then it would be up to individual veterans to make their claims. The case would

not be closed, he said, as some symptoms might not manifest themselves for 10 years — or a generation.

He told veterans they would not be out of pocket by joining the case.

Payment would be on the American "contingency" terms — if he won the case, he would be awarded a percentage of the damages decided by the court. If the case was lost "you don't have to pay a cent."

The national secretary of the Korea and South-east Asia Forces Association of New Zealand, Mr Victor Johnson, said that veterans had not had problems with the New Zealand Government yet.

The association would make formal submissions over war pensions and medical care for veterans and their children who may have been affected by chemical defoliants.

• By late yesterday afternoon, two veterans had offered their cases as representative of the complaints suffered by New Zealanders from exposure to chemicals.

Preliminary Procedural Hearing

Auckland THE NEW ZEALAND HERALD in English 4 Feb 81 p 8

[Excerpts]

NZPA

Washington

All New Zealand Vietnam veterans who claim to have been harmed by exposure to the defoliant Agent Orange are to be automatically included in a massive legal suit against the American companies that made it.

An Australian lawyer, Mr W. McMillan, said yesterday that about 3000 Australian veterans, and up to 10,000 Americans, were likely to be included in the suit, when the first stage comes to trial in the middle of the year.

Mr McMillan, in New York for a preliminary procedural hearing, said the 4000 New Zealanders who served in Vietnam would be given the opportunity to opt out of the suit if they did not wish to be included.

"We plan to circulate information, probably by means of radio advertisements, about the case in New Zealand," he said. "But all veterans will be included, unless they specifically ask for their names to be withdrawn."

Mr McMillan, who visited New Zealand recently to discuss the case, said he doubted that more than a handful of New Zealand veterans would withdraw their names from the suit.

CSO: 5000

NEW ZEALAND

SAMPLES OF HERBICIDE 2,4-D BEING CHECKED FOR DIOXIN

Wellington THE EVENING POST in English 4 Feb 81 p 26

/Text/

Samples of the herbicide 2,4-D used in New Zealand are being analysed to check whether dioxin, a toxic chemical suspected of causing birth defects, is present in it.

The Registrar of the Agricultural Chemicals Board, Mr Brian Watts, said the work was being carried out following reports that Canada had placed restrictions on the sale at manufacturer level of certain formulations of the product.

These followed the detection of certain dioxins in Canadian 2,4-D.

The herbicide, which is less potent than 2,4,5-T, is widely used.

"There is no need for New Zealand to take any restrictive action at the moment, but an evaluation will be made when the results of the American analysis of dioxin levels in New Zealand 2,4-D are known," Mr Watts said in a statement.

CS01 5000

## EMPTY DRUMS OF HERBICIDE 2,4,5-T FOUND ALONG RIVERBED

Wellington THE EVENING POST in English 30 Jan 81 p 16

[Text]

**THE MAN** whom the New Zealand Canoeing Association said yesterday had seen several hundred empty 2,4,5-T drums left in large dumps along the Clarence riverbed, now says only a dozen could be confirmed as 2,4,5-T drums.

The statement has caused a stir down south, with the Christchurch Medical Officer of Health, Dr Bill Malpas, promising an investigation.

The man, Mr Graham Egarr, was taken aback when contacted by the "Post" in Hamilton today and told about the fuss the statement had caused.

The association's safety officer, he said he did not know his comments after a canoe trip down the Clarence in the Kaitiaki Range were going to be given in the Press in the form of a statement.

The statement, attributed to Mr Egarr, was removed by the "Post" yesterday and sent to Christchurch newspapers via the Press Association.

Mr Egarr was quoted as saying: "The empty 40-gallon drums are labelled '2,4,5-T Double Strength'. Several hundred of them have been left in large dumps along the riverbed, within reach of floods, and many have already been washed away."

"... you don't feel too happy cooking your dinner and drinking the water when you've been paddling past 2,4,5-T all day," said the statement.

Mr Egarr said today that not all the drums could be confirmed as 2,4,5-T.

"Going down the river we saw a number of dumps of drums, apparently left by a helicopter. The drums we saw floating in the river had written on them '2,4,5-T Double Strength'."

"There were several hundred drums all told. I'm not sure if they were all 2,4,5-T drums, but the ones I saw in the river were."

He assumed the rest were the same.

A Press Association report quotes the Kaitiaki County Council's serious woods inspector, Mr J. Gammann, as disputing the claim of several hundred empty 2,4,5-T drums.

He said he had taken up 10 2,4,5-T double strength drums to work across along the river this year, and two were yet to be used.

A spokesman for the Lands and Survey Department at Melbourne Station said there could be empty drums from its spraying along the river, but they would not be 2,4,5-T drums. Lands and Survey used Tordon in that area.

# Mining Act Under Review, Changes in Legislation Planned

## Energy Minister's Statement

Wellington THE EVENING POST in English 15 Jan 81 p 4

[Text]

The Minister of Energy, Mr Birch, has initiated a review of the Mining Act with the intention of introducing changes to the legislation during this parliamentary session.

This follows an undertaking made by the Minister late last year.

Mr Birch said today there was mounting public concern over the operations of the Mining Act at a time when mining exploration in New Zealand was undergoing a substantial increase in activity.

It was important, he said, that the present legislation be urgently reviewed to ensure that New Zealand's mineral potential can be used in balance with the public interest.

The review of the Mining Act will be done in stages to allow all interested and affected parties a chance to make representation on what they see as necessary changes to the legislation.

The first stage of the re-

view — to be conducted by the mines division of the Ministry of Energy with aid from an independent consultancy — will involve a review of issues of public concern over present prospecting and mining operations.

The findings of this study, Mr Birch said, were expected to be available by the end of March, and would be considered by the Government's energy committee.

The Minister proposes to have a draft Amendment Bill ready for Government approval early in the parliamentary session. Such a Bill would then be referred to a select committee for public submissions and consideration.

The review will closely examine issues of public participation in licensing procedures — including local body involvement and the problems arising from the provisions of the Act that entitle the holder of a prospecting licence to obtain a mining licence as of right.

"I share the concern of those who feel that the legislation should provide for more useful public participation in the licensing procedures. I am confident that this review will result in improving the legislation both in terms of public interest and mining activities," Mr Birch said.

## Call for License Moratorium

Wellington THE EVENING POST in English 19 Jan 81 p 12

[Excerpt]

**'THE Energy Minister, Mr Bill Birch, should call a moratorium on all mining licences and hold up any future licensing until the Mining Act has been amended, says Labour MP, Mr Eddie Labey.**

Mr Labey today described the Minister's decision to hire a consultancy firm to survey public opinion on the activities of overseas-owned mining companies as a "whitewash" attempt.

It was, he said, "designed to cover up the relentless drive of the goldmining multinationals to extract as much wealth as possible from New Zealand regardless of the enormous ecological damage they will be inflicting on some of the most scenic countryside."

## Threat to Fishing Industry

Wellington THE EVENING POST in English 6 Feb 81 Sec 2, p 16

[Text] **AUCKLAND, Today (PA). — The Coromandel Peninsula's fishing industry, which nets about \$7,000,000 a year in foreign exchange, could be irrevocably damaged by mining in the area, an Auckland University professor warns.**

Ecologist Mr John Morton presents a grim picture in his report on the Firth of Thames and the effect mining could have on fishing.

The firth is an important feeding ground for several commercial varieties of fish and shellfish and is sensitive to whatever comes into it from the land, he says.

In the case of mining, the firth would quite likely suffer heavy damage from run-off sediment and tailings, Mr Morton said.

Sediment stirred up by

grinding or run-off sediment from mine slurry would smother the planktonic animals, an important food source for larger organisms which feed species such as kahawai and kingfish.

Sediment in the water would also slow plant growth by reducing the light needed for photosynthesis.

The toxic content in any run-off could include mercury, lead and arsenic, which would also cause problems.

But final, irrevocable, damage to the firth would be

the loss of shallow mud flats by reclamation with spoil. The productivity of these shallow flats, especially in areas with mangrove fringes, rivals that of first quality farmland, the professor said.

## Too late

The full extent of the dangers to fishing from prospecting or open cast mining were all too likely to emerge only after disruption or disaster to the biological habitat had already happened, he

warned.

"The dangers from mining are so imminent and so virtually certain in their effects, that all those who are engaged in, dependent upon, or who care about the fishing industry will be wise to feel alarm, and to look for public support and reassurance," he said.

ENVIRONMENTAL STATEMENT ON ALUMINUM SMELTER POTLINE ISSUED

Wellington THE EVENING POST in English 21 Jan 81 p 17

[Text]

An environmental statement on the likely effects of building the third potline at the Bluff aluminium smelter was released today by the Minister of Health (Mr Gair).

The statement was prepared by New Zealand Aluminium Smelters, which operates the smelter at Tiwai Point.

Mr Gair said the document, which was in lieu of an environmental impact report, was being made public, but would not be audited by the Commission for the Environment.

This was because the original agreement between the Government and the company provided for the establishment of three potlines in stages, Mr Gair said.

The various statutory approvals obtained at the time

were based on the expectation that the smelter would expand, he said.

Mr Gair said there had been continuous monitoring over the last 10 years of atmospheric emissions, water quality and the health of animals grazing in the vicinity of the plant.

These had confirmed that the existing pollution control technology was adequate for the protection of the environment at Tiwai Point.

The document released by Mr Gair includes the comments of the interdepartmental committee set up to review the environmental effects of the smelter, which concluded that the expansion of the smelter to three potlines would have no significant effects on the environment of the Tiwai Point peninsula.



## GOVERNMENT AGENCIES ADOPT JOINT STATEMENT DEFINING WILDERNESS

Christchurch THE PRESS in English 16 Jan 81 p 11

[Article by John Wilson]

[Text]

New Zealand has wilderness to spare for years to come. Even so, there is growing concern that the areas of "landscape virtually untouched by human influence," even in the more sparsely populated South Island, are dwindling too fast for comfort.

The belief that New Zealand has enough wilderness not to worry about its disappearance is becoming increasingly untenable.

The preservation of substantial tracts of country in a true wilderness condition is thought important partly for scientific purposes—to provide a benchmark against which changes induced by man can be measured — and partly because such tracts provide unique opportunities for recreation.

The Lands and Survey Department, the National Parks Authority, and the Forest Service are sufficiently concerned about the need to preserve such tracts that they have adopted a joint policy statement on wilderness. (A joint statement on anything issued by departments known often to feud would be something to take note of.)

In an attempt to define what wilderness is, the statement declares that a wilderness area should be an area in its primeval

state in which the imprint of man is substantially unnoticeable, and of sufficient size to make its preservation practicable. Ideally, it should be an area which would take a fit party two days to cross on foot.

There is general agreement among these government bodies as well as conservation groups that in a true wilderness there should be no development at all — not even the tracks, huts, and bridges which allow the general public to enter other mountainous or remote areas in relative comfort and safety. Even a low level of development is held to alter the unspoiled character of the land and to encourage a level of use which would destroy it as wilderness.

This means, bluntly, that most New Zealanders will never enter a wilderness area nor enjoy them directly. Management of an area as a wilderness will probably mean that even those able to enter the area safely will need to get a permit to do so. It cuts right across the grain of New Zealand's tradition of free entry on

to public land.

This is a major policy question. Is it right to reserve large areas of public land as wilderness when only a small minority of hardy people will be able to use the land for recreation?

Those who argue that it is right, point out that the preservation of wilderness guarantees diversity of recreation by providing the challenge of the unknown which would not otherwise be available, and that the small minority which needs wilderness for its chosen recreational pursuits can be catered for without depriving the majority which has great tracts of unoccupied, partly developed land open to it.

It is expected that most serious management problems will be solved by designating as wilderness only areas of considerable size which can be surrounded by buffer zones. These will take one day to cross on foot, and in which tracks and huts, but no vehicles, will be permitted.

The Government wishes to involve the community in discussions about wild-

derness while sufficiently large areas remain unspoiled. To stimulate such discussion, the Lands and Survey Department, the National Parks Authority, and the Forest Service have recently issued a colourful combined poster and leaflet which sets out the issues and prospects for the preservation of true wilderness in New Zealand.

New Zealand already has seven wilderness areas gazetted under the National Parks Act, but several of these existing areas are now thought to be too small to be managed successfully as true wilderness areas.

There are two small areas each in the Tongariro and Westland National Parks. The Orakei in the Arthur's Pass National Park is now only 12,000 ha but may be doubled in size and have

existing huts removed.

Fiordland has two wilderness areas already designated — Pembroke (125,000 ha) and Glenorchy (18,000 ha). A third — Preservation — is proposed.

Areas being studied as possible wilderness areas are —

North Island: Moiti, Raukumara State Forest, 50,000 ha, Ruakumari, Urewera National Park, 25,000 ha, Kaimanawa-Kawaka, Central North Island, 60,000 ha.

South Island: Tasman, North-west Nelson, 80,000 ha, Paparoa, Northern Westland, 35,000 ha, Adams, Southern Alps, 90,000 ha, Horoket, South Westland, 80,000 ha, Waipio, South Westland/West Otago, 50,000 ha, Olivine, South Westland/West Otago, 50,000 ha, Waitutu South Fiordland, 25,000 ha, Pegasus, Southern Stewart Island, 65,000 ha.

## POOR KNIGHTS ISLANDS TO BE CONSTITUTED AS MARINE RESERVE

Auckland THE NEW ZEALAND HERALD in English 13 Jan 81 p 2

## [Text]

The Poor Knights Islands will be constituted officially as a marine reserve next month.

The formation of the reserve will mark more than 10 years' work aimed at creating the reserve amid problems with recreational fishing rights and diving, marine conservationists and Government legislation.

The final steps are being taken this month to appoint members of a reserve management committee and formalise an order-in-council from the Governor-General, Sir David Beattie.

It has been a long-held ambition of environmentalists to gain legal protection for the flora and fauna and marine life of the cluster of islands off Whangarei. They are described as having "extraordinary biological wealth".

**Significant**

The two large islands — Tawhiti Nui and Aorangi — are surrounded by numerous smaller islets, stacks and rocks. Between them they are home to a unique variety of endangered and unusual plants, animals, tropical fish and marine life.

The need to protect the islands was first recognised in the late 1960s, but it was not until 1973 that anything was done.

At that time a small but significant phase in the history of the islands began when a group of divers discovered two cowrie shells in the surrounding waters.

This was a unique find in New Zealand waters and subsequent discoveries of tropical fish seen nowhere else in the country marked the area as one of special importance.

After the discoveries, both the Hauraki Gulf Maritime Park Board and the Environmental Defence Society applied to the Ministry of Agriculture and Fisheries for a marine reserve to be established.

**Difficulties**

However, these early attempts foundered because of difficulties over legislation and the fact that the proposed reserve would extend into international waters.

Another major problem was with fishing rights in the rich marine area.

Several sporting groups, including anglers, powerboat and yachting associations, underwater clubs and fishermen were concerned about access, anchoring and fishing rights which would not be allowed under the terms of existing Marine Reserves Act.

The islands also became the centre of an environmental controversy in 1972 when a mining company was given rights to search for petroleum 800 metres offshore.

**Not Suitable**

However, the company pulled out of the venture amid opposition and decided the area was not suitable. An area extending 4.8 kilometres offshore was then made a neutral zone to prevent any future oil searches.

It was not until 1977 that the act was amended to allow controlled fishing in the type of reserve suggested for the Poor Knights.

At this stage, the Hauraki Gulf Maritime Park Board lodged a new application and the Environmental Defence Society withdrew its application in favour of that of the board.

An environmental impact report and audit was prepared and completed in 1979, paving the way for the formation of the reserve.

**Oil Pollution**

The recommendations from that audit, which will come into force next month, mark the outer limits of the reserve at 800 metres offshore.

A further zone will also be established outside the reserve which will be closed to commercial fishing to protect the trevally population.

Two other areas in the reserve will be closed completely to fishing, except for the taking of fish for scientific purposes.

The threat of oil pollution from passing tankers has also been recognised with a condition that the management committee discuss with the Ministry of Transport a contingency plan to deal with oil spills in the area.

SWEDISH DELEGATION TO PRC CRITICIZES ENVIRONMENT AGENCY

Stockholm SVENSKA DAGBLADET in Swedish 7 Jan 81 p 7

[Article by Lennart Lundegardh]

[Text] The PRC environmentalists possess impressive theoretical knowledge--but in terms of practical protective measures the country is still at the level of the interwar period. Pollution situation is very bad in various areas.

This was determined by a delegation from the Swedish environmental protection industry during a visit that took place recently in PRC at the invitation of the PRC counterpart to our National Environment Protection Board.

The Chinese know a lot about purification technology, but they would like to get some help with equipment, for instance equipment for continuous monitoring of the function of purification systems. Such systems do not exist in PRC. Simple spot tests is all that is used.

The Chamber of Commerce of Stockholm arranged the trip. The head of its Department for Economic Politics, Martin Carlstein, says the following: "The Chinese were very eager to enter into an agreement with our National Environment Protection Board and to start collaboration in research with Sweden. We will present this message to director-general Walfrid Paulsson." The scientific contact was initiated in China through delegation member Arne Jernelov, research chief of the Swedish Institute for Water and Air Pollution Research.

He states that the Chinese Industry seems to have plenty of supervisors, but no engineers. "Instead of developing the technology further, old methods are duplicated, which function in an acceptable way according to Chinese standards", he says.

The need for education must be enormous, he continues. And there is an interest for development. Since China has ample work force available, it is not necessary to simply transfer the technology of the West. It can be modified."

"But it will take a long time for China to catch up, probably beyond year 2000," he finishes.

The Swedish delegation received quite a lot of attention in the Chinese press. A fact that certainly contributed to that was that another purpose of the trip was tennis propaganda and establishing sports contacts.

Martin Carlstein was the athletics federation captain of Swedish tennis in 1977 and 1978 and he brought with him on the trip the Davis Cup anchorman Ove Bengtson.

"The outcome was 4-4," says Martin Carlstein, who now for the first time formed a two man "national team" with Bengtson. "We actually won all the doubles matches".

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PEOPLE'S REPUBLIC OF CHINA

BRIEFS

CIRCULAR URGES AFFORESTATION--According to a JIEFANGJUN BAO report, the PLA General Staff headquarters, General Political Department and General Logistics Department recently issued a circular to the entire PLA on energetically promoting afforestation and speeding up tree-planting in areas where units are stationed. The circular calls on all PLA commanders and fighters to foster a good habit of planting trees and taking good care of forests, to take part actively in afforestation activities of their own units or of those organized under unified plans by local authorities, and to make contributions to afforesting the motherland. The circular points out: Planting trees everywhere and making the country green is a major strategic task. Leading cadres at all levels must regard it as a major undertaking. The circular calls on the entire PLA, on the basis of planting more than 25 million trees and afforesting tracts of land totaling more than 60,000 mu last year, to strengthen nurturing and management and help trees grow into forests and timber resources soon. Those units that have failed to plant trees and change the appearance of their environment for a long time must take vigorous action, draw up plans, make great efforts to prepare the land, dig holes, collect manure, prepare saplings, bring about an upsurge in tree-planting around arbor day and do a solid job in covering their areas with trees. [Text] [OW250109 Beijing Domestic Service in Mandarin 2230 GMT 24 Feb 81]

CSO: 5000

RP EYED AS DONOR IN MARINE POLLUTION CONTROL

Manila BULLETIN TODAY in English 10 Feb 81 p 16

[Text] The Philippines could be a donor country in marine pollution control technology.

This was the consensus of the international group of experts who recently made a field trip here to observe the laboratories of the national operation center for oil pollution (NOCOP) of the Philippine Coast Guard.

Led by Mario C. Manansala, local representative of the international oceanographic commission, WESTPAC task team members of the commission were amazed at the "wealth" of laboratory facilities of NOCOP as well as those of the Philippine atomic energy commission and the Ateneo de Manila university.

The WESTPAC task team, under Dr. Yasushi Kitano of Japan, has capped the weeklong conference by visiting personally the local marine laboratories.

The local Coast Guard hosted an international anti-marine pollution workshop two months ago. On May 18-22, another international symposium will open at the Philippine International Convention Center (PICC).

Among the decisions made by the current WESTPAC task team were:

1. Dividing the western Pacific into three zones for the purpose of monitoring the level of marine pollution: Northwest Pacific where the US, USSR, Japan, China and Korea will take part; Central Western Pacific where 14 countries, mostly the smaller ones will participate in the international mussel watch (IMW) program; and Southwest Pacific where only New Zealand and Australia will participate.
2. Using the commercially-exploited mussel known as *mytilus edulis* as the evidence with which to gauge the extent of marine pollution in the northwest and southwest Pacific areas; and the *perna viridis*, in the Central Western Pacific.
3. Unanimously agreeing that the IMW being established in the western Pacific will give priority to the study of the following heavy metals: cadmium, lead, zinc, copper, and mercury in the first priority; and aluminum, arsenic, chromium, cobalt, iron, manganese, nickel, selenium, and silver in the second.

4. Chlorinated and petroleum hydrocarbons will also be monitored, particularly DDTs and PCBs, with Dr. Ford Cross of US and Prof. Cyril Burdon-Jones of Australia volunteering to draft a manual for use by WESTPAC before the end of this year.

Dr. Nadezhda Khristoforova, a senior scientific worker in Russia's Pacific Institute of Geography, told her colleagues in WESTPAC that USSR has 60-70 monitoring stations ready to reveal promptly high levels of marine pollution in her country's most-contaminated "hot spots"; 570-600 stations in coastal sea waters, bays, and inlets; and 1,000-1,100 stations in relatively unpolluted water areas. (HMS)

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## SCIENCE COUNCIL SAYS AIR POLLUTION SERIOUS

Taipei THE CHINA POST in English 19 Feb 81 p 12

[Text]

Air pollution in Taipei is fairly serious as compared to other counties and cities in Taiwan. The quantity of air-polluted substances comes as astoundingly high as 82,000 metric tons in a year, a figure that might shock unaware readers.

Sungshan and Nankang Districts in Taipei City have already become commonly known as the most polluted areas with iron and steel plants discharging wastes into the air day and night. The condition has improved somewhat as some plants in those areas have or are planning to move away from Taipei.

A survey conducted by the National Science Council showed that air pollution in areas other than Sungshan and Nankang in Taipei is also serious.

Of the 82,000 metric-ton air-polluting substances, 91.7 percent are created by motor vehicles. Chungshan, Chengchung and Chiencheng Districts are the most affected areas, the survey report said.

#### Controls needed on motor vehicles

Effective control of discharges from motor vehicles can maintain the cleanliness of the air and thus protect the health of the public, the report pointed out.

The report said air-polluting substances emitted from vehicles include 460 metric tons of particle substances, 155 metric tons of sulfur oxide, 55,000 metric tons of carbon monoxide, 16,000 metric tons of hydrocarbon and 3,000 metric tons of nitric oxide. It further pointed out that most of the motor vehicles here are not equipped with pollution control devices.

To control air pollution in Taipei, emphasis must be laid on the control the discharge of motor vehicles. Unqualified vehicles must be banned from running in the city and inspections must be strengthened.

## TRANSNATIONALS COME UNDER FIRE FOR FORESTRY CRISIS

Taipei THE CHINA POST in English 16 Feb 81 p 6

[Text]

Bangkok, Thailand, Feb. 14 (AP) Transnational corporations have come under renewed fire here for their role in the exploitation of Southeast Asia's dwindling forests, but experts believe that they also hold the key to remedying a predicted global crisis for forests.

A report from a workshop on transnationals in forestry, held here recently by the Economic and Social Commission for Asia and the Pacific (ESCAP), criticizes the large, international companies for not adopting higher standards to protect the environment during recent years of rapid exploitation.

It is also critical of governments willingness, spurred on by the transnationals, to sacrifice their forests for foreign exchange. In 1978, tropical timber exports amounted to 3.5 billion dollars, with Southeast Asia accounting for two-thirds of the production.

One United Nations forestry official has estimated that the current rate of deforestation in all tropical countries is 3,500 hectares (8,750 acres) per day, with a total of 140 million hectares (350 million acres) deforested in the past 25 years.

Indiscriminate deforestation has led to serious, wide-

spread problems of erosion, flooding and the silting up of waterways.

The official says that Southeast Asian governments must now begin massive reforestation despite the huge costs in the face of a shortage of wood by the end of the century.

## Shortage

It is feared that such a shortage, coupled with rapidly growing demand in developing countries, will lead to inflated prices for wood and paper products, while rural populations that depend on forests for fuel wood will be desperately in need.

The transnationals are believed to have more expertise than Southeast Asian governments in forestry management, in addition to marketing information, but the two sides have not always seen eye-to-eye.

The ESCAP report points out that many transnational corporations have impressive records of active involvement and achievements in forest renewal and maintenance programs through their home operations in developed countries.

But experience in developing countries has shown that most transnationals have often applied short-sighted manage-

ment policies and exploitative profit-seeking attitudes outside their own environment, it adds. However, one expert also blamed governments.

"If the big companies apply strict environmental protection at home, why don't they do it here? They don't care because governments don't care," he said.

Transnationals have also come under fire for the transfer pricing practice of undervaluing export timber to evade income and export taxes. Transfer pricing is common to large multi-division enterprises where costs can be shifted between divisions.

U.S. State Department statistics for 1980 speak of the urgency: Thailand has lost 25 percent of its forests in 10 years, while the Philippines has lost 14 percent in just five years.

Indonesia, a latecomer to massive exploitation, has recently started to rethink its position. In the late 1970s Malaysia also topped the one-billion-dollar mark for forest exports, while Burma's more modest revenue increased steadily.

Dominating the tropical hardwoods trade have been transnationals headquartered primarily in the U.S., Britain, and to a lesser extent France, Japan, and lately Korea and Taiwan.

## BRIEFS

**DOWNSTREAM TAMSUI POLLUTED**--Tamsui, Taipei--Residents downstream on the Tamsui River were advised not to drink the river water lest they be infected by a virus. A team of the National Defense Medical Center conducted some experiments under the supervision of National Science Council of the Executive Yuan. The team has collected a total of 61 samples from ten different places. It was discovered from their reports that the number of the microorganisms in the downstream area already exceeded the safety limit, which meant that the river was seriously polluted. The condition of the upperstream area is a little bit better. The team suggests that all who go to the river to picnic, etc, do not use river water to clean their food. [Text] [Taipei CHINA POST in English 13 Feb 81 p 7]

**AIR POLLUTING VEHICLES**--Health bureaus all over Taiwan are implementing tougher laws against all motor vehicles discharging excessive smoke. As of yesterday, well-trained inspectors were assigned to check and catch drivers whose cars or motorcycles, etc, discharge smoke, i.e. carbon monoxide, exceeding the officially-set limit. According to the Health Department of the Taiwan Provincial Government, offenders will be fined from NT\$900 to NT\$2,700. Inspectors will issue fines to those drivers operating vehicles discharging excessive smoke. Judgement will be made on sight and not by equipment. The inspectors will record the licence number, model of the car, time and place of the offense and traffic tickets will be mailed to the offender. If an offender is found offending the same law twice within five days, his licence will be suspended for one month. The authority has carried out a trial inspection in Keelung, Taichung and Tainan cities and Taipei County begun last September last. Results have proved that tougher measures must be implemented all over the island to improve the traffic and reduce air pollution. [Text] [Taipei THE CHINA POST in English 6 Feb 81 p 4]

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THAILAND

**SALINITY CAUSING HEAVY LOSSES IN COASTAL PROVINCES**

Bangkok SIAM RAT in Thai 17 Jan 81 p 2

[Article: "Last Year, Crop Losses Reached 500 Million Baht. Plans Are Urgently Being Made to Solve the Salinity Problem. People Are Losing Morale and Moving"]

[Text] The Ministry of Agriculture and Cooperatives is urgently making plans to solve the salinity problem in Samut Sakhon Province in order to present the plans to the cabinet. Last year, besides the fact that salinity caused losses totalling more than 500 million baht, this problem has hurt the morale of the farmers and caused people to move. This was disclosed by Mr Anat Ahnaphirom, the deputy minister of agriculture and cooperatives, after a conference of the Coastal Land Development Committee.

Mr Anat stated that coconut suffered the heaviest losses. The committee feels that it is urgent that plans be made and submitted to the cabinet in order to solve the problem in this province. As for the measures or plans for solving this problem, new agricultural areas will have to be zoned. Areas where the land can be improved so that the soil is free of salt will be improved so that coconut [trees] can be planted. Those areas that will be used to raise shrimp do not need to be improved.

As for solving the immediate problems, in 1981, the goal is to build a sea dike and dig canals to move water in order to solve the problem for the moment. At present, the officials are conducting surveys in order to estimate the costs.

Concerning the results of the conference, Mr Anat added that, at the conference, rules were given for the pilot project of using windmills instead of engines in raising shrimp at 20 units in Samut Sakhon, Samut Songkhram and Phetchaburi provinces. The King Mongkut's Institute of Technology is the organization that is carrying on this project with a budget of 2 million baht.

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## THAILAND

### EX-FORESTRY CHIEF ANALYZES DESTRUCTION, PROSPECTS FOR SAVING FORESTS

Bangkok SIAM RAT in Thai 12 Jan 61 pp 2, 3

[Article by Dr Dusit Phanitchaphat: "The Facts Concerning Forest Destruction In Thailand"]

[Text] Because there are still large numbers of people who do not know the facts or details concerning forest destruction in Thailand, efforts to solve the problem of forest destruction have not been carried on properly and, in some cases, the decisions made concerning the forest problems have been wrong and they have had a bad effect on the country. Since I have been involved with the forests of Thailand for 40 years, from when I was a low-ranking official to when I became the director-general of the Forestry Department, I have had a chance to check the condition of the forests throughout the country. I have also had the opportunity to observe forestry operations all over the world. Thus, I would like to take this opportunity to present facts and various data concerning the country's forest resources to those concerned and to those who are interested so that they can help each other find a way to quickly improve things and solve the problems.

The fact is that the forests have suffered destruction and [they are smaller in size] than they once were, or before World War II. Forests once covered 70 percent of Thailand but now they cover only 31 percent of the country. This is due to seven important factors:

1. There has been a rapid increase in the population, especially after the Second World War. The population increased from only 8 million in 1907 to 18 million in 1947 and it is now around 50 million.
2. Since the population has increased so quickly, the need for land to grow crops and build houses on and the need for lumber for use in construction and as a fuel has increased in turn and millions of rai of forests have been destroyed.
3. The promulgation of the 1954 Land Code gave people an opportunity to file claim to the land that they claimed to own or file the S.K. 1 form with the local district. The district land officials,



numbering only one or two, did not go check things to determine the facts before or after the claims were filed to determine whether it was being put to use. Thus, some people claimed ownership of large tracts of forest land. In some provinces, the amount of land to which people claimed ownership was larger than the total land area of the province. Since no government officials went to check things, the people who filed ownership claims quickly took this opportunity to invade the forests and cut down the trees. They destroyed valuable trees by burning down the trees instead of making any beneficial use of this timber. At least 20 million rai of forests were openly invaded and destroyed by people settling down there and claiming ownership rights. Millions of trees valued at at least 60 to 70 billion baht were cut down and burned.

4. The condition of the forests deteriorated seriously when the government promulgated the [first] National Economic and Social Development Plan in October 1961. The reason for this is that the goal of this development plan was to develop the economy, especially the infrastructure, and no thought was given to the damage that this might do to the land, water sources, forests, forest animals or environment in general. In particular, this was the case in the construction of reservoirs, or dams, for agriculture and for hydroelectric power. The communications routes that were built in every region of Thailand totaled at least 20,000 kilometers of roads and some of these roads cut through thousands of kilometers of forest land. Since the Forestry Department did not take part in the discussions when the plan was being formulated and was not budgeted sufficient funds or provided the manpower necessary to protect the forests, the forests were destroyed, especially by people invading the forests to use the land for both shifting and permanent cultivation.

5. Government officials have given permission to build industrial factories that use agricultural crops as raw materials or fuel without coordinating this with the Ministry of Agriculture and Cooperatives or the Forestry Department. Or they have allowed such industrial factories to be established or expanded secretly without first obtaining permission. Examples of this are sugar mills and cassava flour mills. This is the reason that the forests, especially the forests located in rather fertile areas, have secretly been destroyed with millions of trees being cut down and burned.

6. Because the world market need for agricultural products is increasing rapidly and prices are high, the forests have been invaded and destroyed in order to plant large amounts of upland field crops such as corn, millet, jute, castor beans and so on. This has been done without giving any consideration as to whether these areas are suitable for growing agricultural crops or whether they should be preserved as forests for the economic benefits or for soil and water conservation.

7. Another reason for the destruction of the luxuriant forests, in both the plains and in the mountains, is that self-help settlements have been built in these forest areas because of the immediate political necessity of this. But at least these trees have been put to good use instead of just burning down millions of rai of timber.

Now that we know what the reasons are for the great loss of our forest resources, we should note the types of things that are responsible for the destruction of the forests. The four things, in order of destructiveness, are as follows:

1. The felling and burning of the trees in the mountain areas, which are the headwaters of the country's important rivers, such as the Ping, Wang, Yom, Nan, Khaeo Pasak and other rivers, has been carried out by the Thai hill tribes. These hill tribes can be divided into six or seven major groups. They number approximately 600,000 to 700,000, although their number has never been surveyed exactly. Some of the destruction has been caused by plains Thais who did not have enough land in the plains to make a living and so they invaded the mountains in order to engage in shifting cultivation.

Based on a land survey of the forest resources that was conducted by the Forestry Department between 1955 and 1958 and on an inspection [of the forest areas] using aerial photographs taken in 1953 and 1954, it appears that 70 percent of the tropical evergreen forests, which are found on the mountain slopes in the north, had been destroyed. At least 3 million hectares, or 19 million rai, had been destroyed. And if we consider the situation today, forest destruction in the north resulting from shifting cultivation has increased in scope several fold.

2. The forests located near communications routes, both in the plains and in the foothills, have been invaded and destroyed, without any attention given to whether or not the land is suitable for crop growing, in order to open up land for shifting and permanent cultivation to plant cassava, jute, corn, millet, sugarcane and other economic crops. Such crops have spread to almost all parts of the country. Even though this has caused less destruction to the forests than the first factor, millions of valuable trees such as teakwood, rubber, rosewood, redwood, hopea and other types of trees, which should have been put to good use, have been burned down. Because most of the forests that have been invaded are or are about to become forest preserves, the people, or investors, have not been concerned about preserving the fertility of the soil. After people have grown crops in an unplanned way for only 2 or 3 years, the soil is depleted or the weeds are so thick that nothing else can be grown. The upland field crops produce good yields only 2 or 3 years and then quantities and quality begin to decline until the point when nothing else can be grown. In 1969, the Forestry

Department calculated that, each year, approximately 30,000 to 40,000 hectares of forest are cleared in order to carry on shifting cultivation. Besides the fact that this has resulted in the total loss of millions of valuable trees each year, the chemical and physical quality of the soil has deteriorated quickly and this has happened over a larger and larger area. Even if Thailand earns billions of baht each year from selling these crops abroad, this is the same as sending our very valuable soil capital, in the form of tens of millions of tons of N.P.K., abroad in exchange for machines, automobiles, cosmetics and even meat, milk and butter. In the end, Thailand will have only rocks, gravel and sand left, which cannot be used to grow crops.

3. Concerning the illegal felling of trees to make firewood and charcoal, the danger to the forests from this is considered to be less than that from the first two types. However, if we consider the damage that has been done to the land and water in the forest areas that have been destroyed, this is still very destructive because those who illegally fell trees to make firewood and charcoal cut down trees of all types and sizes. They even dig out the tree stumps and roots in the ground and cut them up for charcoal until the forests are as flat as a drum. Included in this type are the deciduous and "Tengrang" forests where the soil is poor and very dry. When they suffer destruction, it is very difficult to restore the damaged areas so that they can be used to grow crops or be reafforested. When neglected for years, the land that has been baked by the sun and eroded by the rain will deteriorate to the point where it is like worthless wasteland resembling a desert.

4. Concerning the felling of valuable trees in order to sell lumber or to make personal use of the lumber, the damage to the forests from this type of destruction is less than that resulting from the first three types. This is because most of the trees that are illegally cut down are valuable trees that are big enough to be put to good use. The trees that are not as valuable or that are smaller are left to grow bigger or are propagated. The trees that are illegally cut are sold as finished goods or are made into lumber to build buildings. This is better than simply burning the trees that have been cut down.

Concerning improving the deteriorating situation of Thailand's forest resources, actually, the Forestry Department in the Ministry of Agriculture and Cooperatives and the government have continually tried to improve things. For example, the budget and the number of forestry officials have been increased. However, they are still not in line with the amount of work that must be done and the forest area that must be looked after. The level of importance of the forestry



budget should be put on a par with that of national defense because, if the forests are destroyed to the point where there is nothing left but flat land, this will have a greater effect on the country's agriculture and economy and on the lives of the people than the loss of a war. Concerning revising the forestry laws so that they are more in line with the situation in the country, some action has been taken but there are still many loopholes, especially concerning the illegal felling of teakwood trees and the occupation of forests [to obtain] such things as charcoal and pine pitch. And even more importantly, the officials must carry out their duties diligently and regularly in accord with the law. The police, crime investigation officials and courts must really cooperate with each other in handling the cases involving people who have violated the forestry laws. Such people will be afraid [to violate the laws again]. Good results will probably be achieved if 30-year concessions are given to those who operate sawmills or who engage in the lumber trade, if the local people unite with the state (forest industry organizations) to form limited companies to produce hardwoods and other types of lumber besides teakwood and if people are given forest preservation and afforestation concessions. But it is essential that the Forestry Department, Ministry of Agriculture and Cooperatives, monitor things to see that the lumber companies do things in stricter accord with the policies, laws and regulations of the government than they do at present.

Youths of all ages must be educated so they realize the importance and value of the forest resources and of the various types of valuable natural resources. This must be made part of the school curriculum from the primary to the university level. And it is essential that the students have a chance to go see things for themselves or train in the countryside in order to really impress them. The mass media, which includes the newspapers, radio and television, can play a very important role in informing the people about and making them realize the importance of the natural resources and in getting the people to cooperate more with the government in conservation work.

In addition to the measures that have already been implemented, it is essential that the government revise its policies, and the various ministries must work in harmony with each other and not fight with each other as at present. For example, the Ministry of Interior has a policy of opening up the forests so the people can make a living. But the Ministry of Agriculture and Cooperatives has a policy of preserving 50 percent of the country as forest area.

Another important policy is that the government must set the following targets: the trees that are produced and used for various purposes must come from forests where the percentage of trees planted to replace those harvested gradually increases. For example, within

50 years at most, the percentage of trees replaced must increase from 10 to 100 percent [of those harvested]. As for the natural forests, timber operations must be reduced to the point where such operations cease entirely. These natural forests must be kept as forest animal preserves and they must be preserved in order to help protect the river headwaters. In order to increase yields from the planted forests so that there is enough timber to satisfy the needs both now and in the future, from 1970 to 1972, experts from the United Nations Food and Agriculture Organization conducted surveys and made studies concerning lumber use trends in the country. They found that in 1970, 55.8 million cubic meters of timber were used to make finished lumber and poles and as fuel. Also, 240,000 metric tons of various types of plywood, paper and materials made from paper were produced. This will increase to 80 million cubic meters and 1 million metric tons by 1985. And by the year 2000, the use of these types of timber will have increased to 98.8 million cubic meters and the use of plywood and paper will have risen to 3.8 million metric tons. Thus, they recommended to the government that, in order to have enough timber to satisfy demands, areas should quickly be afforested with valuable types of trees such as teakwood, rosewood, ormosia [makhamong] and so on at a rate of 5,000 to 20,000 hectares per year through the end of this century. As for trees used for fuel, the experts recommended that areas be afforested with trees suitable for use as fuel or charcoal in order to be able to produce 25 million cubic meters of timber per year on 1 million hectares of land by planting 10,000 hectares a year and continually increasing this. At the same time, they encouraged the farmers to plant fast-growing trees around the fields in order to increase their incomes. As for trees that can be used to make paper pulp, these types of trees mature quickly. For example, trees of the pine species can be cut in 10 to 12 years. Concerning this, 350,000 hectares must be planted, at a rate of 5,000 hectares a year, with the rate continually increased, in order to have enough trees to produce 2.5 to 3 million cubic meters of paper pulp per year.

Planting forests as discussed above is not to be done solely in order to have enough timber to satisfy the needs so that foreign currency does not have to be used to import timber or materials made from timber. These forests that are planted will also provide indirect help. For example, they will provide help concerning soil and water conservation, which will benefit agriculture. And they will help keep the climate from changing for the worse. Another thing that is important is that the money spent, or invested, to plant forests will earn interest at a rate of 6 to 7 percent per year. And for valuable types of trees such as teakwood, the interest will reach 10 percent per year. Besides this, this will annually provide jobs for 70,000 to 80,000 people in the countryside. This will keep the people from going and looking for work in the capital. Concerning the planting of these forests, besides the fact that the state will carry this on by using money from the annual budget and by borrowing money from abroad, private individuals or companies that use timber as raw

materials or fuel should be encouraged to invest in planting forests in order to help satisfy people's needs.

The most important problem in planting forests over vast areas is the problem of where this land will come from. It may be possible to solve this problem if the government quickly makes a more serious effort to survey and classify land types and capabilities, as the Department of Land Development has done somewhat, in order to determine and definitely stipulate which tracts of land in which areas should be set aside for forestry, animal husbandry, the planting of perennial and annual plants and mining operations. The forestry laws and land codes must be used to secure the return of the land belonging to the state. At the same time, laws should be promulgated to give the officials the power to strictly control land use in accord with the classifications. As for land that has deteriorated greatly, [people] must be compelled to use crop growing methods that preserve the land and water.

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# ENVIRONMENTAL ACTION PLAN FOR CARIBBEAN STUDIED

Kingston THE SUNDAY GLEANER in English 15 Feb 81 pp 4, 18

[Text]

MANAGUA, Nicaragua.  
February 1981:

Most of the 26 states of the Wider Caribbean will join forces here this month to do something about the deteriorating environment of their common sea and their coastal areas.

From February 23 to 27 (Monday through Friday), scientific and legal experts selected by their governments will meet to put the finishing touches on an ambitious Caribbean Action Plan (CAP).

The plan's principal objectives are 1) to assess the state of the environment in the region and 2) to assist Caribbean governments to solve or minimize environmental problems through careful management of development activities. Three specific problems face the experts:

1) Which priorities should be assigned to the 66 projects proposed as part of

the Action Plan? 2) Is a Caribbean environmental treaty required and, if so, what kind?

3) How to set up a Caribbean Trust Fund to help pay for environmental activities in the region and who will give how much?

The Action Plans as reflected in the 66 proposed activities is very broad. It deals with oil-spill prevention and combat, coastal water pollution, the impact of tourism, the protection of coral reefs and mangroves, the destruction of tropical rain forests and the special problems of fragile island ecosystems. It includes a short-term strategy and medium- and long-term planning for the prevention and mitigation of risks of natural disasters, and arrangements for the training of scientists and technicians and the equipping of marine laboratories.

## Projects

More specifically, one project would look at the effects of pesticides on banana plants and other major crops. Another would consider the

impact of building, engineering and mining activities on coastal areas. Still another would study the life cycle of commercially important species of crustaceans, fishes and molluscs with a special emphasis on the role played by mangroves, coastal lagoons, coral reefs and turtle-grass beds. A fourth would organize cooperative activities for the protection of endangered species in order to help maintain the region's wealth of genetic resources.

Many of these problems cannot be solved by individual countries, even the richest. They require transnational or regional cooperation. Nor, obviously, can 66 projects possibly be implemented simultaneously. Given the great political and economic diversity in the region — there are highly developed free market economies, planned economies, rapid developing, potentially-rich countries, poor states and tiny islands largely dependent upon tourism — all Caribbean states will not necessarily participate to the same extent.



But as in other regions of the world where similar programmes are being developed, the United Nations Environment Programme expects political and economic differences to be overcome by the common interest of the Caribbean countries in safeguarding their sea and because of their vulnerability to so many of the same natural and man-made disasters and hazards in the region.

### Fund essential

UNEP is sponsoring the meeting in collaboration with Economic Commission for Latin America (ECLA).

Since nothing can be done without money, UNEP feels that the early creation of a Caribbean Trust Fund is essential if the Action Plan is not to remain a 15-page inventory of hopes and generous intentions.

Estimating the cost of an initial three-year programme (1981-83), which focuses on projects of common interest, at \$3,700,000, UNEP plans to offer to contribute almost 40 per cent of that sum or \$1,580,000.

This offer depends, however, on the willingness of the Caribbean countries themselves to shoulder

the remaining amount of \$2,320,000. Some projects, proposed as part of the Action plan, are of specific interest to individual countries or groups of countries. These will cost about \$4,500,000 and are expected to be financed by individual governments (40 per cent) and by international aid organizations (60 per cent).

Preliminary contacts with banks and financing agencies are encouraging, according to UNEP officials, but again their help presupposes official adoption of the Action Plan and strong support by the governments of the Caribbean.

France, the Netherlands and Great Britain are participating in the meeting and expect to be full participants in the Action Plan once it is adopted.

The "Wider Caribbean Region" covered by the Action Plan comprises all of the countries and territories of the insular Caribbean including the Bahamas, the north-eastern area of South America from Colombia to the French department of Guiana, Panama, all of Central America, Mexico and the Gulf States (Texas, Mississippi, Louisiana, Alabama, and Flor-

ida) of the United States, as well as the coastal and open waters of the Caribbean Sea proper, the Gulf of Mexico, and the waters of the Atlantic Ocean adjacent to the states and territories mentioned above.

A programme for such a vast area cannot be run from outside the region, so the experts are expected to discuss and possibly decide on the location of a Regional Coordinating Unit. No fewer than 11 Caribbean governments have expressed interest in welcoming the small secretariat on their soil.

A final decision on this matter and other major questions will be taken at a ministerial-level Caribbean conference of plenipotentiaries in April.

As for a legal framework for the Action Plan, one possibility would be a treaty committing the Caribbean States to protect their common sea and their coastal areas from environmental degradation and to develop them in a sustainable and environmentally sound manner. It would be hard to find anyone unwilling to give up lip service such a position, but often, short-sighted

economic interests conflict with environmental considerations.

Special attention is paid by the Action Plan to the problems of the small islands of the Caribbean. Many have extremely fragile ecosystems with limited resources and relatively large populations.

The delegate of one of those small, crowded islands, Barbados, at a recent Caribbean meeting, described his region's growing concern about the protection of its marine resources:

"The pollution problems of the Caribbean Sea may not have reached the magnitude of those in the Baltic and the Mediterranean... but the similarity of the land-locked configuration of the Caribbean with the potential for retention of pollutants from a developing region warrants early preventive action. If the countries of the region are to benefit from the exploitation and sharing of the resources of the Caribbean Sea, it is imperative that immediate action is taken to arrest the trend towards destruction of marine life which is so essential to the maintenance of the marine ecological balance and to the sustenance of our people." — UNEP.

ISRAEL

BRIEFS

WATER POLLUTION--Routine tests by the Afula District Health Office has shown that the drinking water is polluted in four villages of the Gilboa Regional Council despite chlorination by Mekorot. [Text] [Jerusalem THE JERUSALEM POST in English 6 Feb 81 p 2]

CSO: 5000

# INSTITUTE UNDERTAKES ENVIRONMENT STUDIES

Jiddah ARAB NEWS in English 18 Feb 81 p 3

[Article by Alan Kenney]

[Text]

JEDDAH, Feb. 17 — The Meteorological Institute of King Abdul Aziz University is carrying out several projects oriented towards the study of Saudi Arabia's environment, Dr. Fawaz Al-Alami, the school's dean said.

The research will be used not only for a better scientific understanding of the Kingdom's environment, but for helping officials in various agency's understand how they can take into consideration what special obstacles the environment places in development's path, Dr. Alami said in a recent interview with Arab News.

"We have an arid environment which is a unique situation not only in the Arab world, but all over the world. To have a school which deals with this environment is a great asset to the university and the institute itself. So the research is usually pertinent to the environment," Dr. Alami said.

He added that from the environmental point of view, the research teams study the aridity of the Kingdom; from the environmental point of view, they study the water, air and solid waste pollution of the environment; from the hydrology and water resources point of view, they study water management, building of dams, the checking of the underground

An agreement was signed in 1980 between the Kingdom's Minister of Finance Sheikh Muhammad Ahs al Khail and the United States' Secretary of Treasury G. William Miller to conduct the joint studies. According to Dr. Alami, the agreement calls for supplying the institute with a high-caliber academic staff, support the administration and technical assistance of the institute and conduct research in Saudi Arabia and the United States pertinent to the arid land situation of the Kingdom. This is done jointly with 11 U.S. universities organized under a Consortium for International Development (CID) lead by the University of Arizona. Chief of party for the U.S. universities staff is Dr. Jeff Eichmy.

Six months ago an institute committee, which deals with and refines research proposals submitted from the institute in cooperation with the eleven U.S. universities, agreed to nine proposals for local research. It was the first meeting for the committee and the research proposals were the results of the institute's efforts.

Some major research projects deal with air quality monitoring. One investigation is aimed at evaluating particulate matter concentrations over the major Saudi Arabian

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*"We have an arid environment which is a unique situation not only in the Arab world, but all over the world. To have a school which deals with this environment is a great asset to the university and the institute itself."*

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water systems and organize courses to teach the people who need to know a little bit more about the management of water resources overground. From the arid lands and agriculture point of view, the institute deals with plant production, range management and forestry.

cities. Five major cities of Riyadh, Dhahran, Medina, Mecca and Jeddah were selected to conduct measurements for dust-fall. In Jeddah, different types of particulates will be monitored. These include smoke, suspended and deposited matter. In addition chemical and physical analysis will be performed.

A much larger air pollution project has been undertaken by the institute's vice dean, Dr. Omar Sabbagh, to study the air quality of the Western Region. Dr. Sabbagh will place air-monitoring stations in Mecca, Medina, Jeddah and Mina, the data on air quality can be monitored from the stations simultaneously and sent back by telecommunications to a central base where preliminary data reduction and quality analysis is performed.

According to Dr. Eighmy, one project involves an effort involving the environmental sciences department and deals with decision analysis. The project will involve taking with ministers and officials to get their ideas where and how they decide when environmental parameters become problems.

Another area of research will be a survey of the entire western coast in the Jeddah region from aerial photography. Investigators from the Arid Lands Studies school will look at the geomorphology (dealing with the earth's relief features) of the area and build a series of maps that can be used as planning documents, or source material for construction. In addition they will map drainage areas and calculate different types of vegetation cover,

and that will produce a regional survey.

"Here again it will be the first step in what we hope to see as ongoing and continued spin-off type research to provide the baseline information," Dr. Eighmy said. "The problem is -- the very basic problem, what's out there, what do we have to work with. And before you can begin to do anything you sort of have to describe it. And this is what we're going to do," he added.

"We're not saying we're the only ones studying the environment so everyone can make good plans, I think many people in positions of responsibility in Saudi Arabia are interested and sensitive to this," Eighmy said.

He pointed out that one of the responsibilities of the institute from the scientific view is that they are interested in continually refining their understanding of the environment and growth trends.

"We have a job that's never going to be finished. After industrialization is here our job won't be finished, we will continually try to provide information to improve our plans and use of this area," he added.



# WATER CRISIS ENDS, SUPPLY GOOD TO 1983

Gaborone DAILY NEWS in English 30 Jan 81 p 1

[Article by Andrew Seninyi]

[Text]

THE WATER crisis is over, thanks to the recent rains. There is enough in the Gaborone Dam to last us till January 1983.

If the flow of the feeder Notwane Dam continues for the next three days, Gaborone Dam will overflow.

By yesterday, the artificial Falls resulting from the wall of the feeder dam were roaring with water, flowing into the main Gaborone Dam.

The Lobatse Nywane Dam overflow was yesterday reported to be spilling into the streams which link up with the Notwane Dam and hence Gaborone Dam.

However, the Minister of Mineral Resources and Water Affairs Dr Gaseitwe Chiepe cautions. But of course people should know that in this country as a principle we cannot afford to waste water.

Yesterday Dr Chiepe made a two hour tour of Notwane Dam, the feeder streams and Gaborone Dam, and when the leader of the team, Mr J Lang of Water Utilities Corporation, said the major dam might overflow within four days, Dr Chiepe commented: "Wouldn't that be wonderful?"

Dr Chiepe sighed. We were worried that we may not have enough water this year. Yesterday (Wednesday), I learnt that there is only two and a half metres before the dam overflows.

At the end of the tour, Dr Chiepe announced that there were considerations to expand the Gaborone Dam, but this would

take some time because the project would cost several million Pula.

The other hitch, she said, is that the Notwane Dam is under international waters agreement. The settlement was reached between South Africa and the former Bechuanaland Protectorate authorities. If the level of the Notwane Dam has to be raised, then fresh negotiations will have to be entered," she further explained.

The Minister was all smiles as she viewed the Gaborone Dam which now has to cater for a population of nearly 60,000. At times, the dam also supplies Lobatse, but now that Nywane Dam is overflowing the demand has been reduced.

According to Dr Chiepe, water plans will be stopped up despite the current ease because in future Jwaneng which is currently drawing water from boreholes may have to be supplied by the Gaborone Dam.

At the moment the existing supplies through water to go on for seven years. But during this time we should prepare ourselves to be in a position to supply Jwaneng with water, she advised.

However, not all is well in the view of the Water Utilities Corporation because of the impending vandalism at the Gaborone Dam.

Mr Lang explained: We suffer from vandalism. The fence around the dam has been pulled down at several occasions and asbestos sheets under the roof have been broken.

The Corporation might have to put up a security fence on the Lobatse side of the dam with one gate and a security guard.

The dam is a favourite spot for poachers, a sight seeing factory and houses as it is very easy when the water level is high.

The last time the dam was full was in 1978. Since then the water level had fallen considerably. BOPA

## BRIEFS

**MOLEPOLOLE WATER SHORTAGE**--Molepolole is currently hit by water shortage following the breakdown of the main pipeline from the booster reservoir last Thursday. Residents are reported to be either roaming the village with empty buckets in search of water or forming long lines at the Government Camp boreholes. Kgari Sechele Secondary School and the Scottish Livingstone Hospital authorities say water supply to their institutions has been irregular ever since the main pipe burst. Water system toilets at the Government Camp have been closed as the water situation remained unchanged. The water supply spokesman said his men are busy on the pipeline in a bid to bring the situation to normal. However, it is not yet known when the situation will be brought under control. [Text] [Gaborone DAILY NEWS in English 21 Jan 81 p 2]

**DROUGHT RELIEF**--Farmers in the worst drought stricken areas, Bobirwa and Ngamiland District are benefitting from the drought relief scheme this ploughing season. According to a spokesman of the Ministry of Agriculture, each family in the two districts was given two bags, one of maize and the other of sorghum. The two districts were drastically affected by drought last year, and the outbreak of foot and mouth disease crippled the farmer's financial resources. On the other hand, the Francistown District Agricultural Supervisor, Mr F. Moseu, said ploughing in his District started full swing last month. In Mahalapye farmers are reported to have started ploughing late because of the impact of drought on cattle. The cattle are used mainly for ploughing. According to District Agricultural Officer Mr. L. Malatši, there are more farmers this year coming to his office with enquiries about farming loans than the previous years. [Text] [Gaborone DAILY NEWS in English 9 Jan 81 p 2]

IMPROVEMENT SEEN IN DROUGHT-STRICKEN WOLLO REGION

Addis Ababa THE ETHIOPIAN HERALD in English 30 Jan 81 p 2

[Editorial: "Rehabilitation Efforts in Wollo"]

[Text] The plight of hundreds of thousands of people in most parts of the drought-stricken areas of Wollo region is steadily improving with the intensification of relief efforts and the constant supply of essential services for our needy compatriots.

The relief operation as carried out by the Relief and Rehabilitation Commission (RRC) has assumed increasing momentum that large numbers of the needy people are not only being housed, fed, and cared for, but also constantly encouraged to develop self-sufficiency through active involvement in productive ventures.

It was in response to the urgent need felt by the revolutionary government for finding a solution to people affected by drought that the RRC was promptly instituted charged with the responsibility of relief, rehabilitation, and prevention of natural disasters.

The horror of widespread famine and the news of heavy casualties in human lives and cattle, which were directly attributable to the irresponsibility and indifference of the fallen regime, moved the hearts of many and attracted their sympathetic attention. This motivated them to generously lend their helping hands from all quarters, thus coming out in support of the activities of the Relief and Rehabilitation Commission.

The spirit of cooperation and wholehearted assistance from within and without which poured in with unfailing regularity played the most decisive role in bringing the situation under reasonable control. The dedicated services of international relief agencies and philanthropists and the earnest concern of friendly governments who bore a great share of the relief work in the region, and which are still active, certainly lives in our memories as vivid demonstration of man's concern for fellow human beings.

The RRC, which is the first institution of its kind to be created after the onset of the Revolution, no doubt, accomplished gigantic humanitarian and revolutionary tasks in carrying out relief operation through constant provision of grains, rehabilitative food, transport, medical care, storage facilities, relief centres and water supplies.

Many medical services and clinical establishments have been provided and are actively operational in most parts of Wollo to facilitate the relief efforts, especially with the active cooperation of voluntary agencies. When the relief effort began with the establishment of the Commission, storage requirements were one of the most difficult tasks to fulfil particularly under emergency circumstances. It is heartening to witness that the RRC later managed to cope up with the problem that it now has excellent storage facilities in most parts of the region.

Problems of water supply, too, have been and are being effectively combatted with rehabilitation efforts, mainly through water-well drilling and the supply of water in tankers particularly in the lowland regions. The system of providing constant water supply in tankers at essential points along the highways and along the various routes is particularly proving highly beneficial in lowland areas for the benefits of both humans and animals.

As part of practical steps to avoid the recurrence of drought, the Commission in cooperation with pertinent public and mass organizations, is undertaking several preventive measures and is actively carrying out a vigorous programme of reforestation. It is gratifying to note that, despite irregularities in rains to date, most of the highland areas which have once been exposed to the danger of deforestation, soil erosion and landslides, are gradually being reforested and some parts of the highland regions have begun to recover their former green beauty.

An important step in carrying out relief operation in a way that will be fully commensurate with the revolutionary government's objectives will be to further encourage needy compatriots develop the desire to become self-reliant. This, too, calls for multilateral endeavours in establishing various fields of productive engagements through the continued cooperation of public, mass and private organizations from within and without.

While the efforts of the Relief and Rehabilitation Commission and the enthusiastic cooperation of various organizations in this regard is really worthy of particular praise, yet more concerted efforts have to be exerted with unfailing enthusiasm, as part of a long-term programme of fully rehabilitating needy persons and in striving to transform the drought-hit areas into centres of production.

CSO: 5000

## BRIEFS

SCHOOLS PLANT 6,000 TREES--Mzuzu, Monday. More than 6,000 pine and blue gum trees were this year planted during the National Tree Planting Day in schools within Mzuzu Municipality. In all, fourteen primary, secondary schools and teacher training institutions within the Municipality took part in this national exercise. A Regional Forestry official here said that there was a good response from both school boys and girls as well as the ordinary people in the villages around the schools in the exercise. "More schools took part in this year's National Tree Planting Day and as a result more trees have been planted," the spokesman noted. [Excerpt] [Blantyre DAILY TIMES in English 17 Feb 81 p 5]

CSO: 5000

## BRIEFS

**FLOOD DAMAGE**--The Zambeze River has flooded more than 3,000 hectares of cotton and drowned one person in Tambara District, Manica Province. Reports from the province say this natural calamity has mainly affected maize plantations to the extent that nothing of this crop can be saved. The same state of affairs has been registered along the rivers (Molra), (Nacafula) and (Impacue) in the Tambara District, where collective, private, state and cooperative farms have been destroyed. The people of (Macossan) location in (Barue) District are also facing a similar situation. This area was affected by drought last year. [Text] [Maputo Domestic Service in Portuguese 0800 GMT 18 Feb 81]

CSO: 5000

## RAINS POSE THREAT TO CROPS IN VICTORIA

Salisbury THE HERALD in English 24 Feb 81 p 10

[Text]

## BULAWAYO

INCESSANT rains in the past few weeks in the Victoria Province are posing a threat to the crop yield in both commercial and subsistence farming sections. The Department of Conservation and Extension and the Department of Agricultural Development (Devag) feel that more rain this week will damage prospects of rich harvests in the province.

Crops badly affected are the early sowings of groundnuts and maize now ready for removal from the fields. Wet conditions have prevented the harvesting, and groundnuts are already sprouting in their pods.

Devag officials are worried that the rains will be a big blow to rural farmers who returned to their lands late last year after fleeing during the war.

"Their hopes were all pinned on the harvest in May but these rains could be a hard blow to them. I hope the rains stop immediately," said provincial Devag officer, Mr B. Mofat.

Hundreds of dollars worth of crops have been dislodged or washed away by heavy rains.

Conex group officer for the province, Mr C. Machingai, who is responsible for all the purchase lands, said that the worst hit were the sandy soil areas of Western Guts around Chikwanda and lighter soil areas in the eastern parts of Bikita District.

"There have been no problems in the heavy soil areas. Farmers there are happy. All they want is the rain to stop a little so that they can harvest the early maize crop. If the rains continue they could lose much of it," he said.

The commercial farmers along the Fort Victoria-Umtali road have suffered little, though cotton was presenting a few problems.

"Spraying to control cotton diseases has become difficult and in some cases completely impossible because of rains," said Mr C. Humphrey.

Conex provincial officer in charge of the commercial sector.

He said that commercial farmers in Eaka and Bikita, where light sandy soils were common, had experienced the biggest setbacks.

"Most of them grow an early crop of groundnuts and harvesting has been completely ruled out by the incessant rains. They stand to lose a lot of money from this valuable cash earner.

"In the lowveld both the sugar and the maize crops are flourishing though a fair amount of sugar canes have been dislodged by rain," said Mr Humphrey.

Short sunny spells could allow most farmers to harvest their crop but further rains pose a storage problem and could destroy a lot of unprotected crops.

# RURAL IRRIGATION PROJECTS REPORTED

Salisbury THE HERALD in English 21 Feb 81 p 3

[Text]

THE Government has started work on irrigation schemes throughout the country aimed at improving water supplies in villages and increasing productivity in the rural areas.

## BULAWAYO

Announcing this at the opening of Tjolotjo Council yesterday, the Minister of Natural Resources and Water Development Senator Joseph Meka, said several pilot schemes were already in operation and more were being investigated.

"The idea is to sink boreholes in the rural areas, pump the water to elevated reservoirs and then distribute it through pipes and irrigation channels to villages and farming areas," he said.

Four of the pilot schemes, one each in Matabeleland, Midlands, Manicaland and Mashonaland, have been launched.

Another four schemes are being worked on in the Lupane, Gwanda and Plumtree areas, while in Mashonaland, Midlands and Manicaland, a further six are planned.

"These are all examples, and once they have been completed Ministers, local dignitaries and the public will be invited to visit and see them in operation and make suggestions for their improvement."

"If the pilot schemes are successful more will be built as money becomes available. We will then work on mass production."

Senator Meka stressed that the project was a long-term exercise.

"It is an on-going project which was started soon after independence and will not be completed for quite some time."

● The Tjolotjo Council officially opened by the provincial commissioner for Matabeleland North, Mr T J Hemans, is only the second in the province to be inaugurated.



## UTILIZATION OF WORLD RESOURCES STRESSED

LD230941 Moscow PRAVDA in Russian 16 Feb 81 p 6

[Academician Ye. Fedorov article: "Protecting Nature for People"]

[Text] The problems of regard for nature, the rational use of resources and environmental conservation are becoming increasingly important for every country and for mankind as a whole. "Such global problems as raw materials and energy, the elimination of the most dangerous and widespread diseases and the protection of the environment, the conquest of space and the use of the ocean's resources are already important and topical enough. In the long-term they will have an increasingly noticeable influence on the life of every person and on the whole system of international relations. Like the other countries of socialism, our country cannot stand aside from solving these problems which affect all mankind's interests," Comrade L.I. Brezhnev noted in his report to the 25th CPSU Congress.

Man's influence on nature has become comparable with elements of natural phenomena. Rivers are artificially transformed more in decades now than natural processes change them in tens or even hundreds of thousands of years. Moreover, such phenomena exceed the limits of individual countries and are acquiring a global character. The pollution put into the atmosphere by the industry of some countries, Belgium and the FRG, for example, carried by air currents, cause noticeable economic harm to the Scandinavian states. The pollution of the world's oceans harms every country's fishing industry. The clearing of tropical forests, the main source for replenishing the oxygen in the atmosphere, is becoming a serious potential threat. Mankind is coming increasingly closer to the point of fishing out the oceans.

Over 100 years ago now, when almost all the scientists and practical experts were speaking of subjugating nature, the classics of Marxism were noting the importance of treating it carefully. It is K. Marx's catch phrase that "culture, if it develops spontaneously and is not **DIRECTED CONSCIOUSLY**, [capitalized words published in boldface]...leaves a desert behind it." F. Engels noted that man must not rule over nature like conquerors over another people. Man's dominion over nature, he said, lies in the fact that, unlike other beings, he can understand its laws and use them correctly. Under socialism a rational attitude toward nature and sensible, careful utilization of its resources must be a necessary condition for the activity of a society whose highest aim is to steadily improve the people's material and cultural living standards.

The socialist state acts in such a way as to ensure that the task of increasing production efficiency is closely linked with concern for the population's well-being and health. Article 18 of the USSR Constitution provides for the adoption, in the interests of present and future generations, of the necessary measures to ensure the protection and scientifically substantiated, rational utilization of nature. A special section in the CPSU Central Committee's draft "Basic Guidelines" for the 26th party congress is devoted to this problem.

Every year R2 billion is allocated solely for the construction of water purification systems at enterprises in our country. As a result of measures adopted in recent years there is significantly less untreated sewage, and atmospheric pollution and the atmospheric content of harmful substances are being reduced. The inspection of enterprises and installations from an ecological viewpoint has begun. An upper limit is being established for the permitted discharge of effluent from enterprises, so that the total discharge in a particular region does not create pollution dangerous to health. When the matter is approached sensibly and carefully, improved purification promotes not only the protection of the natural environment but also the more efficient utilization of raw materials. Many chemical enterprises are already making a profit as a result of the utilization of substances formed in purification installations.

The full utilization of all substances present in raw materials and techniques which eliminate environmental pollution must become a basic condition in the planning of every new enterprise. At the same time attempts persist to reduce the concentration of harmful effluent from production by merely dispersing it. To this end some people are designing very high chimneys--200 and even 500 meters high. Such a chimney will indeed reduce the concentration of harmful substances near the enterprise, but it will pollute a larger area.

A serious problem is the destiny of the three seas--the Caspian, the Aral and the Azov Seas.

The level of the Caspian Sea is falling. True, the fact that the Kra-Bogaz-Gol, from which 5-6 cubic kilometers of water evaporated annually, has been cut off from the sea does create a temporary reserve for water consumption in the Caspian basin. Nonetheless the further diversion of water from the Volga for irrigation and other needs must be linked with the diversion of part of the flow of the northern rivers of the USSR's European territory into the Volga.

The significant reduction in the flow of the Syrdarya and Amudarya Rivers in connection with the irrigation of lands in Uzbekistan, Kazakhstan and Turkmenia is causing a rapid fall in the level of the Aral Sea. At the same time possibilities exist for countering this process, to which end appropriate research and planning work must be carried out in the immediate future.

The use of part of the flow of the Kuban River for irrigation has led to a significant reduction in the inflow of fresh water to the Azov Sea, which is increasing its salt content and causing undesirable ecological consequences leading to a fall in the stock of valuable fish. There are a number of proposals for optimizing the ecosystem in the Azov Sea (building a dam in the Kerchenakly Strait and other proposals). From our viewpoint measures to resolve this problem too must be implemented in the near future.

In connection with what has been said, it would be expedient to incorporate in the CPSU Central Committee's draft for the 26th CPSU Congress the following proposition: "To consider it necessary, in planning new enterprises, to give preference to closed, waste-free techniques. To complete the necessary research and design developments and commence work on the restructuring of the Aral Sea and the optimization of the ecosystem in the Azov Sea."

Since man's influence on nature has become global in nature, the situation emerging in other countries cannot fail to cause concern. In capitalist states the enterprise owner, primarily concerned for his profits, often resists measures envisaging the construction of purification systems, although in a number of countries special laws have been passed on preventing environmental pollution.

However, in the conditions of the bourgeois system laws are often powerless in the face of the pursuit of profit.

The poisoning of the Love Canal in the United States by chemical enterprises' effluent has caused serious illnesses among people living on its banks. Serious concern is caused by the destiny of the Mediterranean, into which effluent is discharged by nearly 140,000 plants and factories in the littoral countries. Tankers do much harm: Every year accidents and the washing out of their tanks result in the discharge of about 2 million tons of petroleum products into the world ocean. Some transnational corporations transfer the "dirtiest" areas of production to developing countries.

The exhaustion of natural resources and deterioration of the environment on a global scale has promoted many Western scientists to assess--using systems analysis--the possible prospects for mankind's future development. The first such calculations led the researchers to pessimistic conclusions. According to them, in the next 50-70 years mankind's rapidly growing needs and the earth's limited resources will lead to the threat of extinction for part of the earth's population. However, these calculations are based on the mechanical extrapolation of the present situation, which exists mainly in the capitalist world. They do not take account of the differing developmental trends in the opposing social systems or of a number of features of scientific and technical progress.

In reality, in constructing forecasts it is necessary not only to proceed on the assumption of the inevitable exhaustion of natural resources, but also to take into account the growing ability to transform substances and satisfy man's requirements with new production methods. Some 50-60 years ago it would hardly have been possible to predict that clothes could be made not only from cotton, linen and wool but also from synthetic fiber. Limited, nonrenewable resources are gradually becoming renewable thanks to the repeated utilization of the same raw material. The potentials of new energy sources are becoming increasingly extensive--nuclear power, direct solar radiation and so forth. As for renewable resources, such as fresh water, fish and so forth, here too the potential exists for significantly increasing the efficiency of their utilization. For instance, fish can be bred in the ocean with as much success as in a pond.

Mankind has reached a stage of development where mankind as a whole must approach nature and the world as a whole. Indeed, the world's resources are now utilized--as a result of trade and exchange--not only by individual countries, but on a worldwide scale. Consequently the problem of a rational attitude to nature must be resolved by joint efforts. Let us cite one example. A 20 to 30-fold increase in energy production could lead to a change in the earth's climate. But how can it be judged what kind of climate is "good" for the whole world and what kind is "bad"? This can only be done if all countries' interests are considered.

The West has also come to this conclusion in recent years--and not only scientists. Thus the U.S. State Department, which last year, together with a number of other departments of the administration, submitted a report to the president on the possible world situation in the year 2000, was forced to admit that only by means of "unprecedented cooperation between countries" is it possible to prevent the exhaustion of natural resources, the spread of famine and an increasing gulf between different countries in terms of the level of development. However, the report does not say that broad international cooperation is only possible in conditions where detente is maintained and deepened. Obviously the report came at a bad time.

The policy of confrontation and the whipping up of international tension now being implemented by the U.S. administration hinders the creation of an atmosphere of trust between states, which is necessary for the joint resolution of global problems.

The arms race itself diverts tremendous amounts of resources from peaceful production, restricting opportunities for the resolution of these problems, which requires considerable expenditure. According to American experts' calculations about \$600 billion is needed to ensure the ecological purity of U.S. industry by means of creating purification installations and improving techniques. An impressive figure! But it is equal to the Pentagon's military spending for just 3-4 years.

Great and perhaps irreversible damage is done to nature by tests of various types of weapons, above all nuclear weapons.

The Soviet Union and the other socialist countries consistently advocate lessening of the threat of war and come out in favor of broad international cooperation, including cooperating in resolving global problems and in environmental conservation. Our country has proposed the conclusion of an international convention banning the military or other hostile utilization of means of modifying the natural environment. On the USSR's initiative a conference was held in 1979 on environmental conservation in Europe, and a European convention was drawn up making provision for measures to prevent air pollution. The 35th UN General Assembly session approved the Soviet proposal "On states' historical responsibility for preserving the earth's nature for the present and future generations." This document indicates the right way of resolving problems affecting all mankind--the limiting and ending of the arms race, and international cooperation.

But that is only a beginning. The rational utilization of natural resources in the interests of economic and social progress for all peoples and a careful attitude to nature require joint efforts by all people and all states, a qualitatively new level of international cooperation, the strengthening of peace, and the ending of the arms race. There is no other way.

CSO: 5000

## PAPHOS ENVIRONMENTALISTS OPPOSE NEW AIRPORT

Nicosia THE CYPRUS WEEKLY in English 13-19 Feb 81 pp 1, 28

[Text]

The government is going ahead with plans to build an airport at Akhelia, near Paphos, despite fears expressed by environmentalists that its operation could pose a threat to this idyllic tourist spot, and by others that it would be a superfluous, costly investment.

Communications Minister Mr George Hadjicostas told the Cyprus Weekly "We are going ahead. As far as the noise is concerned, we have made a study and the findings are such that they do not warrant a change or revision of our plans".

The Minister said he would be writing soon to environmental groups protesting over the airport project, to explain the government's viewpoint.

**ESTIMATED COST £7m.**

Actual work on the airport has not yet started—it is only the designs and drawings that are being prepared, but tenders for the project could be invited by this summer.

"The airport should be ready for operation in 1982 as originally planned", Mr Hadjicostas said. The cost is estimated at £7 million, but efforts will be made to curtail it as much as possible.

The idea is to have a runway 2,700 metres long, capable of taking any type of aircraft flying distances of up to 2,000 nautical miles non-stop. Its parking apron will take six airliners.

**'VERY IMPORTANT PROJECT'**

When President Kypria now laid the foundation stone last October, he described the airport as a "project of huge importance" and claimed it would turn Paphos into a "paradise and an important tourist and commercial centre".

Local business interests seem to agree with the President. Mayor Ioannis Agrotis told the Cyprus Weekly "An airport would offer invaluable services not only to Paphos but the whole of Cyprus, in many ways".

**'SHIFT'**

He did not believe the noise would be a problem. The experts, he said, could "shift slightly" the direction of the runway, so that planes taking off would avoid the hotel area and fly instead right over the sea.

"Besides, there will be only a couple of aircraft a day, so it won't be a problem."

Mr Costas Savvides, the manager of the town's largest hotel, the Paphos Beach, agreed with the Mayor and dismissed the noise problem also. "With the landing and take off of one aircraft every day this would be negligible, since we don't envisage more traffic than that," he said.

**ROAD**

Mr Andreas Polynikis, the Manager of the Alci and Theofano Hotels, expressed reservations, however. He said he wrote to the Ministry of Communications when the project was first announced expressing the view the investment could be better devoted to the improvement of the road linking Paphos to Limassol.

He said he expressed reservations at the same time that the aircraft noise would prove to be a nuisance and affect the tourist area of Paphos, but received reassurances from the Ministry that there was no such danger.



## MAXIMUM

However, Mr Polymkis who is a trained meteorologist, added that from his observations the prevailing wind direction in Paphos is westerly 95% of the time and easterly only 5%. This would mean that aircraft taking off would do so by flying over the hotel strip and the port area when their noise production would be at its maximum he pointed out.

Mr Louiza Havouzaris, president of the local Chamber of Commerce and Industry, dismissed totally the concern expressed by the environmentalists. He wondered "What are they up to? Are they trying to cancel this project?"

Mr Havouzaris said: "We believe that an airport at Paphos would help tremendously the export of vegetables and the tourist development of Paphos. So both as an individual and as chairman of the business community, I fully support and endorse the project."

## ASSURANCES

What about the noise? Wouldn't that scare off the tourists?

Mr Havouzaris said: "We have been assured by the Public Works Department people, the experts even by Ministers, that the airport will

be constructed in such a way that under no conditions will the aircraft be flying over the tourist or residential areas."

But that is not totally true, apparently. It is understood that the proposed runway is such that an aircraft will have to fly overland for at least six or seven miles. It would take-off over Paphos harbour but must also fly pretty low over the seaside hotels.

## RELIC

Experts believe that because of the terrain—with hills almost immediately north of the proposed site—the noise from landings and take-offs would be reflected and increased by the mountains. Larnaca has no such problems.

(Incidentally, one of the ancient relics that has to be removed for the construction of the airport is a small 13th Century church situated right in the very path of the proposed runway.)

And is it a viable project? Most experts say no, and claim that a feasibility study by a reputable British firm showed that an airport in Paphos would not pay.

1) There is not sufficient hinterland to create traffic and sufficient exports throughout the year. Normally an airport would be a feasible

proposition if it had more than 15 double flights a day.

2) Paphos is away from the business centre of the island and, unlike Larnaca will not be able to serve any other towns. Even Limassol would be nearer to Larnaca than to Paphos. Therefore, the only people using Paphos airport would be people destined solely for Paphos.

3) Financially, the cost of operating and maintaining two airports will be at least double, without taking into consideration the need to employ additional staff at the Civil Aviation Department.

## 'COPTERS

Paphos lawyer Mr Panikos Sivitanides, former member of the House, said: "The government should conduct a very serious feasibility study before they do anything hasty so that we don't create another problem like the industries started here a few years ago."

He said that back in 1965 he had suggested in the House a helicopter link with Paphos which would better serve the needs of the area.

Local artist George Kottsonis said: "Noise would not be much of a problem for Paphos town itself as the airport will be about eight miles away near Akheia. It's better than a sea port which would be much dirtier."

## ENVIRONMENT MINISTER INTERVENES IN HAZARDOUS WASTE CASE

Copenhagen BERLINGSKE TIDENDE in Danish 12 Jan 81 p 3

[Text] Environmental Affairs Minister Erik Holst is now intervening actively in the case involving the chemical factory Cheminova's poison dump at Harboore Tange. The minister has given the Environmental Board authority to act from an environmental point of view which means that the state could start out by paying for having the waste removed or neutralized.

The poison waste dump at Harboore Tange contains around 5000 tons of chemical waste mixed with sand, including DDT, mercury and waste from biadan production. That is 100 times more than previously assumed and half of it is pure poison. However coast director H. B. Sorensen of Lemvig told RB [RITZALS BUREAU] that the 2500 tons of poison represented sheer guesswork.

But the environmental affairs minister is not quite so calm.

"In view of the fact that the poison facility is thought to contain larger quantities of poison than we thought at first--and in view of the estimates of whether this poison dump could withstand another western storm--I have decided to cut through all the talk of who should pay to have the dump removed--or neutralized--so that no damage can be caused to the environment, fish, people or the areas surrounding the poison dump," the minister told RB.

Erik Holst added that for this reason he had authorized the Environmental Board to act from an environmental viewpoint during a meeting with the Ringkobing County Council this week, even if there is no agreement on who is to pay for this.

"The Environmental Affairs Ministry may have to ask for funds for this purpose and we would then seek regress from the institutions or administration we felt should pay to take care of the entire question in an environmentally correct way," the environmental affairs minister said.

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## BIOLOGISTS REPORT DESTRUCTION OF WILDLIFE SPECIES

Copenhagen BERLINGSKE TIDENDE in Danish 9 Jan 81 p 3

[Article by J. J. Kjaergaard]

[Text] Biologists have been making a survey of Danish nature and they paint a black picture. We are about to lose the stork, the golden plover and the black grouse. The fire-bellied toad and the leaf frog are threatened. The otter and the small porpoise have suffered sharp declines. All in all there have been declines in a long list of plants and animals. Even among such common birds as swallows.

One can read this in a newly-issued book from the Conservation Board, "Status of Danish Plants and Animals."

The book gathers together the 50 speeches made at a conference in April 1980, arranged by the Conservation Board as an introduction to the Council of Europe's educational campaign on wildlife.

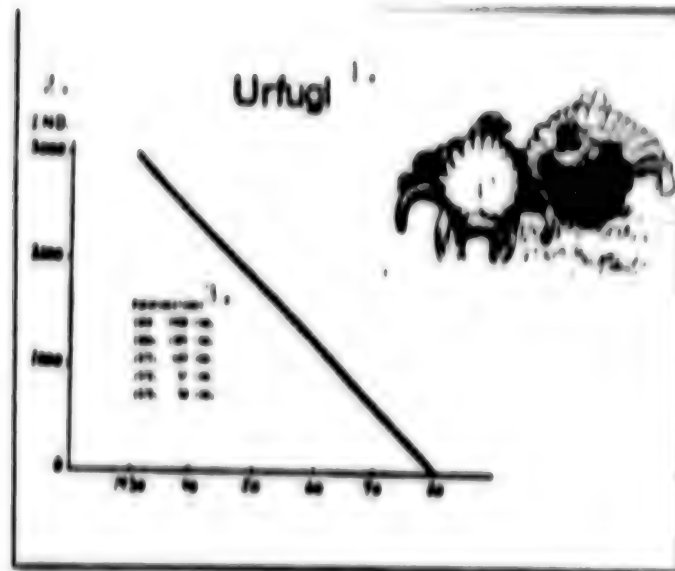
The main reason for the negative development in Denmark can be found in changes in the landscape. Meadows have been drained and plowed, ponds have been filled in, commons have grown over, streams and roadsides have been maintained with a hard hand. Streams, lakes and fjords have been polluted with waste water--and a poisoned environment pollutes the food chain.

The environmental debate in the last 10 years and the legislative initiatives taken were apparently unable to halt the impoverishment of our wild flora and fauna according to the survey taken by the biologists.

The legislation intended to preserve natural assets and the efforts made as a result could not keep up with developments, the director of the Conservation Board, Viggo Nielsen, pointed out.

The situation for heaths, salt marshes and meadows is the same as that for the forests in the early 19th century. Only a fraction of their former area is left. If the rest is to be preserved, everyone--owners, administrators and authorities--must stand together to protect it.





The diagram shows population changes in the black grouse over the last 50 years.

Key:

1. Black grouse

3. Spring population

2. Number

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## ENVIRONMENTAL PROTECTION OF SHORES PLANNED

Athens I VRADYNI in Greek 31 Jan 80 p 7

[Article by Vana Papadopoulou]

[Text] A clean sea, a proper development of the beaches so that they can accommodate more people, and restrictions on construction are the three basic objectives of the National Coastal Management Program.

Work on this program was started a year ago so that it could be completed in time to be submitted for approval at the upcoming meeting of the National Council on Regional Planning and the Environment (ESKhP) on 7 February.

Included among the guidelines which are charted in the relevant decision are certain objectives which, when materialized, will improve significantly the environment of our coastal areas--at least where they have not already been completely ruined. The following are central elements of the program:

An effort to make the beaches accessible to as many more people as possible, through the development of recreational activities in these zones, and above all by the cleaning up of the beaches. It is proposed that the responsibility for this be assumed by the Ministry of Regional Planning, in cooperation with the local agencies, and that there be special financing for it. In this connection, it is also essential that the citizens themselves be informed and mobilized--and this should include the mobilization even of the children--so that the coastal zones can be relieved of the wastes of every type which are presently overrunning them and transforming them into ready-made "dumps" and sources of pollution.

The setting of conditions and limitations on construction along the country's coastal areas--a job which will be entrusted also to the YKhOP (Ministry of Regional Planning and Development)--so that in the future at least, we can put checks on the repeated usurpations of lands along the coasts, the substandard and illegal construction near the sea, and the scandalous departures from town-planning principles observed in these areas. These restrictions have not yet been given specific form, but consideration is being given to extending the beach-line beyond which no construction will be allowed and fixing it at 30 meters from the sea. Also, the alignment of buildings will not be allowed to be parallel to the shore but will have to be at right angles, no multistory buildings will be permitted, possibly those areas having substandard structures

will be improved, and so forth. Of course, these adjustments will depend also on the characteristics of each region with respect to its natural terrain and subsequent development.

Immediate imposing of biological purification and control over the wastes from the industries which are located in the coastal zones.

#### The Significance of Our Coasts

Marion Kamkhia, doctor of city and regional planning and the person in charge of the National Coastal Management Program under the Ministry of Coordination, explains to I VRADYNI that the protection and development of our coasts which is being undertaken for the first time in our country assumes a special significance in view of the facts that:

- The length of Greece's coasts amounts to 15,021 kilometers, which is distributed almost equally between the continental and island regions.

- The extent of coastal zones for which the program was set up covers about 30 percent of the total surface area of the country.

(This zone covers 6-12 miles in the direction of the sea, depending on the region, while on shore it extends to a length of 1,000-5,000 [feet?], also depending on the region and whether it is in a developed or natural state).

- It is estimated that in this coastal zone are concentrated 80 percent of all the industries in the country, 55-60 percent of the total population, 90 percent of our tourist activities, and a significant portion of agriculture--given that because of their mild climate these regions contain the most productive lands for cultivation of early-growing fruits and vegetables, and so forth.

- The coastal biotopes are exceptionally rich in flora and fauna, and the intensification of fish farming is essential.

From these figures alone, it follows that directly or indirectly the coastal zone constitutes the country's most important natural resource. For this reason, the pressures of growth (tourist, industrial, residential, transportation) which the coasts have been and continue to be subjected to are causing many adverse repercussions on both the natural and economic value of the coasts--repercussions which have even been disastrous in many areas.

Mr Kamkhia stressed that the primary objective of the program is the reconciliation of these theoretically antagonistic pressures for conservation and for growth--given that conservation alone would be tantamount to bringing these regions to a standstill, and this is by no means one of the intentions of the State. This task of reconciliation was assigned to the secretariat of the ESKhP. At the same time, a Coordinating Committee on Coastal Management has been created, to which belong the Technical Chamber and the Central Union of Municipalities and Communes of Greece. And the decision containing the guidelines which will be submitted to the ESKhP also has the approval of the above agencies.

Of course, emphasized Ramkhia, it is absurd to suppose that the materialization of the program can be done overnight. The interventions of the State will be made in stages, as the theoretical and practical framework is readied in each region, but it is expected that by 1982 the State will be quite close to putting into practice the rules which it is enacting today.

#### General Guidelines

The general guidelines charted by this program for the protection and development of our coasts, along with a number of initial actions being taken, are the following:

- The organizing of data files on the present condition of our coasts.
- A study of the existing legal framework on protecting and developing the coastal areas, which has already begun.
- Fixing of administrative boundaries for the coastal zone.
- Formulation of general guidelines separately for each activity--for industry, tourism, agriculture, and so forth--concerning the specific conditions for the establishment, functioning, and growth of each sector.
- Instituting the practice of making studies on the environmental and land-use impacts of various establishments--industrial, residential, and so forth.
- Designing corresponding local programs for coastal management, as well as an intensive effort to inform the public about this matter. The Crete Coasts Program is already in the process of being drawn up by the Regional Development Service of the Ministry of Coordination, in cooperation with the local agencies.

More specifically, the objectives set by the program are:

- Conserving and increasing the yield of maritime resources, with priority being given to the development of fish farming.
- Protecting coastal agricultural land, which is being devastated by industrial and residential growth, and earmarking land of high productivity for farming, with the enactment of relevant measures and incentives.
- Pinpointing sites of special natural beauty. The taking of a census of these has already been started, by the Directorate of Natural Resources in cooperation with the Ministry of Agriculture, and the protection of some of them is included in a decision made by the ESKhP which was issued in 1980.
- Protection, restoration, and promoting of the historical coastal settlements, archeological areas, monuments, and antiquities found in the sea.
- Satisfying the need of the population for a first or second residence in the coastal zone along with a parallel handling of the negative repercussions from building-lot creation, substandard construction, and the geometric growth of these structures.

- A rational development of tourist activity, in accordance with the possibilities and capacities of each region.
- Maximization of recreational opportunities for the public along the coasts, and ensuring the necessary conditions for keeping them clean.
- Determining the suitability of coastal areas for various types of land use.

#### The Industries

Moreover, a study done by the regional services of the Ministry of Coordination has already begun on pinpointing the specific problems of coastal areas on a name-by-name basis. The most problematic gulfs as determined by an initial examination--and as entailed, moreover, by the fact of the thoughtless congestion of activities and people along their shores--are the Saronikos, the Thermaikos, the Partaikos, the gulf of Iraklion in Crete, the enclosed gulfs, Malliakos, Papastitikos, and the southern Korinthiakos. A study is already being designed, which will be used as a guide for the others, on cleaning up the areas around the Malliakos and the Voreios Eivoikos gulfs. Also a special study is going to be drawn up on protecting and developing the Amvrakikos Gulf.

As for the industries specifically, Mr Kamkhis said that any decision in the direction of unconditionally removing them from the coasts would not be realistic, given that for many of these their nearness to the sea is essential. But what can be done--and this is provided for in the program--is to find areas in the coastal zones which are suited to industrial development in accordance with national, regional, and local needs, and also to impose biological purification and intensive control more generally over industrial wastes, so that the industries will stop polluting the sea and their environs.

#### Biotope

A second more specific decision which is directly connected with the program for protecting and developing the coasts and which is also going to be submitted to the ESKHP is that which concerns the ecological handling of the country's biotopes. These will be pinpointed, categorized, and demarcated. Biotopes which need protection include the shores and gulfs of Lakonia, the coastal forest of Kalafas, Sarakiniko Bay at Elafonisos, the sand-dunes west of Neapolis, Lakonia, estuaries of the Akheron and Sperkheion rivers, the shores of Mani Peninsula, and a number of others elsewhere in the country.

It should be noted that 500,000 stremmas of the country's lagoons are suited for fish farming. The gulfs where this kind of farming is done have a similar total area.

But the yield is still relatively low, amounting to 8,000 tons annually (from the lagoons). The corresponding production of France and Spain, whose total lagoon areas are smaller, is double and triple that of our own.

#### Coasts and the EEZ

The need for protecting and developing the coasts has been recognized internationally, and this problem had already begun to be dealt with through the drawing up-

of studies for programs and the taking of measures by the United States some 8 years ago, and by the world organizations about 7 years ago.

In addition, this need was pointed out also during the establishment of the Council of Europe. And the managing of the coastal zone will be the subject of the Fourth Conference of European Environmental Ministers which will be convened in Athens in 1983. Also, at the Conference of Regional Coastal Areas of the European Community, the first part of the Chart of the Coasts has been ratified. This chart will be voted on in its entirety during the session of the conference which will take place in the summer or at the beginning of the autumn in Crete.

The financing of the Coastal Management Program of the Ministry of Coordination-- which will be implemented in cooperation with all the other ministries and agencies which share in this jurisdiction--will be done by way of the public investments budget and possibly also by way of the International Bank.

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# TEMPORARY MEASURES TO COMBAT ATTIKA AIR POLLUTION

Athens TO VINA in Greek 4 Feb 81 p 1

[Article by Nikitas Orfanidis: "Private Cars and Taxis Will Be Prohibited If Cloud Remains"]

[Text] The first emergency measures to deal with the dangerous atmospheric pollution in the Attika basin were decided on 3 February and began to be applied immediately. More specifically, beginning at dawn on 3 February, the central power station at Keratsini decreased energy production to the minimum and, at the same time, began to use cleaner oil whose sulfur content is eight times less than that of ordinary oil. There was an order to stop operation of central heating in all the public services and organizations and it was recommended that the large industries restrict their operations as much as possible.

The ministers of social services, industry and energy, and communications were in contact in order to impose a partial or general immobilization of private cars, taxis and trucks in case the cloud of smog continues to remain above the basin.

The three ministers made new recommendations to the public to avoid any unnecessary use of private cars and to use central heating in apartment houses as little as possible.

As for buses, which number 1,300 in Athens and are considered responsible for only seven percent of the pollution, there is no question of cutting off their circulation even if the total immobilization of vehicles is ordered.

The application of the first measures and the more intense reiteration of recommendations to the public were judged necessary when it was verified that the cloud, which on the afternoon of 2 February had moved to Mount Parnis, returned in the night hours above the center of Athens where it stayed until midday hours on 3 February. The ratios--above every tolerable limit--of smoke (seven photometric units), in combination with the indication of increased ratios of nitric oxides and dioxides, and the Meteorologic Service's unfavorable forecasts for today, compelled the ministries of industry, communications and social services to proceed immediately to application of measures to protect the public health. A very decisive factor in this development was the fact that the ratios of smoke in recent days were the highest noted in recent years in Attika.



Up until late on the afternoon of 3 February, specialists were nearly certain that a temperature inversion, though weaker, will also be noted this morning and consequently the cloud will remain above the center of Athens.

The greatest ratio of smoke was recorded on 3 February by the control station on Patision Street.

The Ministry of Social Services explained that the use of cleaner oil at the Athens DEI [Public Power Corporation] station cannot occur on a regular basis because this fuel is far more expensive than ordinary oil and does not exist in the quantities needed for this purpose.

The ministry recommends that the public use radiators in apartment houses, where heating is deemed indispensable for various reasons, only from 1300 to 1700 hours.

The basic supplier of polluting elements to the atmosphere is, according to the Panhellenic Center for Ecological Research [PAKOE], the industries because the cloud appears on a regular basis above the southern and western suburbs (Drapetsona, Keratsini, Nikaia, Rendi, Algaleo, Peristeri) while in the eastern suburbs (Nea Smyrni, Ilioupoli, etc.) the problem is almost non-existent even if meteorologic conditions are the same for the entire Attika basin.

Traffic in Rendi, reports PAKOE in its announcement, is five times less than in the center of Athens, while the concentration of nitric dioxide is three times greater.

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## LAKES POLLUTED BY PESTICIDES

Athens AKROPOLIS in Greek 31 Jan 81 p 3

[Article by A. Khatzinikolaou: "Lakes Slowly Dying, Birds Poisoned By Pesticides"]

[Text] The Greek lakes are in danger of being transformed into immense "grave-yards." This disturbing message is coming from many hunting associations which denounce the death of thousands of aquatic birds and indicates a problem with broader dimensions and direct effects on the health of all of us.

The Ministry of Agriculture, with the development of scientific studies, appears to comprehend the whole problem and to be seeking its solution.

More specifically, following the many disturbing casualties in recent months, the ministry's Directorate of Hunting, with specialized persons employed for the protection of aquatic game, is seeking solutions which will ensure the normal development of aquatic life in Greek lakes.

The dangers for aquatic life are many and arise from various causes. Perhaps the principal cause noted by the Hunting Directorate is constructions of various technical installations (fences, etc.) near lake shores. The case of the drainage works which occurred some time ago at the Evros River delta is characteristic. They mortally affected aquatic life in the area, with severe losses of birds which are becoming rare in our country.

Another serious danger arises from cases in which river beds are being diverted in other directions resulting in creation of stagnant grounds of water--something related, that is, to what happened last October in the Strymon River after diversion of its bed.

### Dangerous Illness

The Serrai Forest Office had at that time issued an announcement according to which the wild ducks and other types of birds had been stricken by allantiasis, a very dangerous illness for man. It is due to an anaerobe, a toxin which develops in stagnant lake waters. The symptoms manifested by the birds in the Serrai area which were stricken by the disease were paralysis of the wings and feet. The Serrai Forest Office gave instructions to the hunting associations for their members not to eat these birds, but also to avoid taking care of them.

A few days later, the lake at Kerkini was found by hunters visiting it to be filled with thousands of dead birds. The hunters estimated the number at 20,000 but the appropriate service from the Ministry of Agriculture talks about lesser numbers.

According to testimony of many hunters, the whole area stank suffocatingly because of the thousands of dead ducks which were decomposing, as well as the various micro-organisms which died within the lake's stagnant waters, due to the Strymon River bed.

The inhabitants in the area gave different explanations for this unprecedented catastrophe among aquatic birds. They maintained that the level of the lake fell because of the diversion of Strymon River, resulting in the lake being polluted since its waters are not being renewed. Others said that the birds fed on rice which had been sprayed with pesticides.

#### Oversights

In their document, the hunting associations noted several oversights of the appropriate agencies as concerns the destruction of the lake at Kerkini. The following were pointed out characteristically: "The Serrai Forest Office was obligated, immediately after it was informed about the death of aquatic life at Kerkini lake, to urgently ask the Ministry of Agriculture to send crews to collect the dead game and then cremate them. No signs were posted forbidding hunting because of sick birds." The document ends: "We would not be lamenting a general catastrophe if there was a study and program, if there were no deadly pesticides."

Specifically as concerns the destruction noted at Kerkini lake, the Hunting Directorate ended in the conclusion that it is due to works to construct a dam in the lake bed.

"For this reason," Papaevangelou from the Hunting Directorate told us, "it is judged indispensable for the safety of the lakes that, before any action or construction of works near to the lakes, a special study be compiled which will show ways to protect the aquatic life. Our service does whatever it can in this direction and I think that in the long term we will be in a position of not facing tragic phenomena of annihilation of birds as in the case in question."

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# ENVIRONMENTAL AFFAIRS MINISTER SETS PRIORITIES FOR 1981

Oslo NORGES HANDELS OG SJOFARTSTIDENDE in Norwegian 23 Dec 80 p 10

[Text] "My New Year's wish in the area in which the Environmental Affairs Department works must be that 1981 will bring broad political unity in favor of the new planning law," Environmental Affairs Minister Rolf Hansen says in an interview with NTB.

"For me it is natural to see the Planning law as part of the reform for local authority, in which the local authorities are included to a much greater extent in the decision-making process."

"This work requires continued broad political support and the government's proposal for a new Planning Law is an invitation to cooperation in this important area. I might also add that we have noted positive signals from all parties involved in the work we are now doing," cabinet minister Hansen says.

The environmental affairs minister stresses that the main argument for political cooperation on the Planning Law is that it is the first step in the direction of simplifying the planning system and legislature concerning the use of land in the best interest of the users, landowners, and public administration.

"The pressure on our land today requires that the political authorities in the communes, counties, and centrally, have the tools they need and this the Planning Law is meant to provide," Hansen says.

## Long List

Minister Rolf Hansen has a long list of important matters that either will be decided in 1981 or will progress considerably over the course of that year.

The list includes 28 points. One of the points deals with:

## Hardangervidda

In October 1979 parliament legislated the establishment of a large national park on both private and state-owned land. At the same time, it was decided to establish two nature preserves. The issue has received much attention in the press, especially because of interest on the part of communes bordering on the nature preserves and the national park. Agricultural interests have held an especially important position in the debate.

"If we look at the scope and significance of this matter, especially for agriculture, I must say that there has been a high degree of unity concerning the plans for Hardangervidda," Hansen says.

"There is broad unity in favor of protecting this area, but of course it must also be said that there have been differing opinions in the various communes concerning where the boundaries of the national park and the nature preserves should be drawn."

Details concerning the boundaries and the final decisions will be determined in a royal resolution this spring. This resolution will serve as the keystone in a large and important area of environmental protection, the minister says.

#### Environmental Report

"For the first time since plans were made for most of our national parks in the sixties, parliament will have an opportunity in March 1981 to discuss the overall picture of our environmental policies. At that time we will present a report to parliament on the protection of the environment in Norway," Hansen says.

The basis for the report will be the study "Environmental Protection in Norway." Among other things, the study stresses that environmental protection considerations must be an integral part of overall planning. There must also be more effective administrative coordination between environmental protection and other areas of society with which, as experience shows, environmental protection may clash, the minister says.

#### Pleasure Boats

The tasks of the Environmental Affairs Department deal not only with regions we wish to use during our free time, but also with what we use to get there and what we use once we arrive, including pleasure boats.

"We plan to present a report to parliament on pleasure boats around the end of February or the beginning of March. Among other things, it will deal with the distribution of responsibility for planning and organizing the use of boats," Hansen says, adding:

"In particular, it will deal with the construction of marinas and boating areas." He also says that because of the increasing antagonism between interest groups, an outline for a so-called multi-use plan for water bodies will be discussed.

With regard to pleasure craft and fees, the government intends to clear up some questions with its boat study and report, Hansen says.

#### Immediate Environment

"Earlier this year, parliament took up a report on a better immediate environment. This report received broad support. What will happen in this area in 1981?"

"In addition to the fact that the draft of the Planning Law takes the immediate environment into account in various ways, we also have an urban environment campaign

under way. In the countries of Europe, 1981 will be an "urban environment" year.<sup>10</sup> A large part of the department's work in the immediate environment will be carried out through this campaign.

But even if the campaign is shortsighted, it will provide inspiration and useful experience, says the minister, who also points out that there is political unity concerning the urban environment campaign. One of the major tasks is to activate the local communities and those who live in these areas to do something to improve their immediate environment and their living conditions.

#### Offensive Against Waste and Pollution

"During the spring of 1981, parliament will probably discuss a proposal for a comprehensive law on pollution and waste. Among other things, the law will deal with water and air pollution, noise and waste from industry, agriculture, and activity on the continental shelf.

The law is also intended to replace several laws and a large number of regulations that are presently scattered throughout the code of laws. At the same time, new regulations are being sought to cover all types of waste and all areas of waste management. New regulations for recycling will also be included.

There will be new regulations concerning acute pollution in general and it will be required that environmental impact studies must be completed in the early planning stages of large projects.

#### Waste Treatment

In a country such as Norway, we are faced with increasing amounts of waste of different types. What will be done about the problem in the near future?

"A proposed program for better waste management will probably be submitted for approval during the first half of 1981."

Financial assistance to communes which individually or in conjunction with others wish to carry out projects in which waste is used as fuel will continue. In addition, we give financial support to projects aimed at reclaiming energy from wastes and waste heat from industry.

"What about the problem waste?"

"Even though full state financing is being offered to the first sites for collection of problem wastes (we are not speaking here of storing it), it has proven difficult to establish such places."

One of the reasons for this is that the state lacks the authority to require communes to establish such sites and also that people protest against having the waste in the vicinity of their homes.

In addition, we have extensive projects under way for collecting, transporting, and destroying problem wastes. Among other things, we have large joint projects with Norway and Greenland, which we believe will have good results, Hansen says.

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## RESEARCH INSTITUTE ISSUES STUDY ON HEAVY METALS IN ENVIRONMENT

Oslo NOROIS HANDLES OG SJOFARTSTIDENDE in Norwegian 5 Jan 81 p 5

[Text] Heavy metals in food, air and water can hardly be said to cause sickness or poor health among Norwegians. People in Norway are less exposed to heavy metals like lead, mercury and cadmium than people in other Western nations.

These findings were reported by the Society for Industrial and Technical Research (SINTEF) based on evaluations of the total intake of heavy metals through food, air and water. The report is based on earlier investigations into the specific areas mentioned.

According to the report, most Norwegian foodstuffs must be studied further in order to provide accurate information about heavy metal content. The research institute's findings are, in part, based on similar studies in other countries and show significant regional differences. We lack Norwegian analytical data with respect to grain products, for example, which may be an important source of lead and cadmium. According to the report, further detailed studies must be made on the presence of heavy metals in milk and milk products, vegetables, meats, eggs and edible fats.

Fish and fish products are likely to be the most important source of mercury for Norwegians. Extensive investigations have been made in this area in Norway and the fish that is marketed is also subject to inspection.

The report points out that water pollution can lead to increased mercury in fish.

One of the areas of most concern has been leaded gasoline. It is assumed that Norwegians will be less exposed to lead by reducing the lead content in gasoline.

However, the SINTEF report claims that the levels of lead in Norwegians' blood are so low that we can hardly expect any significant reduction in the next few years, even by lowering the amount of lead in our environment.

This report concerns the population in general and does not include evaluations on occupational-related exposure to heavy metals.

ZEOLITE-CAUSED CANCER PARALYZES VILLAGE

Athens ATHENS NEWS in English 12 Feb 81 p 11

[Article by David Storey: "A Village Dying of Cancer"]

[Text] Karain, Turkey, Feb. 11, (REUTER)--The Turkish village of Krain is dying of cancer.

For generations horrified villagers have watched helplessly as their brothers and sisters, mothers and children suffered a painful deaths which became known throughout the area as the "Karain Agony." [as published]

Their stomachs swelled with fluid, every breath drawn became a torment and, in the words of one old man, "after two years they died like a tree rotting from the inside."

Only now, after six years of research, have Turkish and foreign doctors and scientists finally identified the dark secret of Karain, an ancient settlement among the weird rock towers of Cappadocia, where early Christians found sanctuary by digging caves in the soft rock.

"We are facing a cancer epidemic," said Professor Izzet Baris, who as head of the respiratory diseases clinic at Ankara's Hacettepe Medical School has devoted his time to investigating what has become a tragic and perhaps unparalleled phenomenon.

Although tests are still going on, Professor Baris and the Turkish health authorities are convinced that the pale yellow rock that provides foundations and walls for many of the 580 villagers contains a cancer-inducing mineral.

After representations from the professor and others, Karain and another similarly-affected village nearby have been declared natural disaster areas. [as published]

But the diagnosis of the problem and the decision to uproot them is seen by many of the villagers as a greater evil than staying and suffering the community's blight.

Karain has the reputation of being a highly productive and harmonious village and wherever it moved, the people say the community would be broken up.

To add to their despair at the awful reality and the dismal prospects, the villagers have been given no advice from either the regional or central government. They said they heard on the radio they would have to move and had not been told where.

According to the neat pile of death certificates kept on her desk by the young nurse in charge of the health centre, there were 17 deaths in Karain in the last year.

Seven of these, including the Imam (Moslem priest), were confirmed as cancer and three others were suspected cancer deaths.

A similar pattern was observed in previous years for which there were records available, Professor Baris said in an interview at his Ankara clinic.

The full extent of the problem came to light in 1974 when the then village Muhtar (head man) travelled to Ankara and laid the community's sad health records on Professor Baris's desk. Previous victims had been treated unsuccessfully for heart ailments or tuberculosis.

The professor widened his study, getting the assistance of the Medical Research Council (MRC) in Penarth, Wales and from the World Health Organisation (WHO), which helped with mineral research.

It was established that the sick people suffered from malignant pleural mesothelioma, which had previously been found in those in contact with asbestos.

An exhaustive search found no asbestos in Karain. But it did reveal excessive quantities of another mineral formed of needle-like particles called zeolite.

It was everywhere--in the dust the villagers breathed, in the crumbling, porous rocks of their homes and in the lung tissue of the victims.

"There is no known cure for this cancer. The only way to protect the people is to move them away," said the professor.

"The agony of this cancer is far worse than others, like the more usual lung cancer," he said.

He recounted the story of one man who died of it last year:

"The villagers would shudder when he began screaming, and his mother would try to quieten him. One day he asked his mother to give him a pair of pliers. Suddenly he squeezed her fingers in them. 'That is how much it hurts,' he told her."

The cancer strikes after at least 20 to 25 years' exposure to the zeolite and takes about two years to kill, so that many who leave the village early have been struck down later on. Many of the victims are in their early 30s.

Sitting around a glowing wood stove in the little administration office, the men of the village spoke of their community's fears with eyes filled with concern and confusion.

Issa Dilek, a weather-beaten man in his mid-forties, told of three friends, all born in 1945 and two of them twins, who had moved away from the village at the age of 12. One became an army captain, one a pharmacist and one a teacher.

"They all died in the last two years when the cancer reached out to them from their childhood," he said.

Asked whether there was anyone in the village now who was suffering from cancer, Mr Dilek pointed to an old, skinny man with a black beard near him on a bench. "His son has it."

"Nonsense," replied Mehmet Sullu quickly. "My son just has something wrong with his chest after that mining job he had."

Professor Baris and other villagers had already confirmed the 31-year-old son was a cancer case. Like others in the village Mr Sullu definantly refused to accept it.

The government decision that the villagers should move has polarised the community. Some are in favour of fighting the order and staying. They have even attacked the former Muhtar for taking the problem to Professor Baris in the first place.

But all were well aware of the damage that has already been caused by the branding of Karain in the press as "Cancer Village."

"We used to be renowned for our seed onions and our potatoes. Now people think they must also be contaminated and won't buy from us," said the present Muhtar, Ismael Koca.

"And no-one wants our brides anymore," added another villager grimly. Women from Karain used to have a reputation as skilled and hard-working and fetched a high bride price.

Professor Baris said he had discovered Karain women who had died of cancer after marrying into families in three neighbouring villages.

Some people have already taken the warning and left Karain. The population has dropped from about 800 in the last five years those that remain can only watch with concern the 53 village children as they play in the muddy school yard, all wrapped snugly against the chilling winter wind.

The research at Karain led to the discovery that the nearby village of Tuzkoy has a similar problem with zeolite-bearing rocks.

At a third village where the rock was found the people had moved across to the opposite bank of their river when a bridge was built 20 years ago and only three cancer cases have been detected.

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